

State of Illinois  
State Civil Service Commission

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Manual of Examinations



SPRINGFIELD

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State of Illinois  
State Civil Service Commission

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Manual of Examinations

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## CHAPTER I.

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### GENERAL INFORMATION.

One of the largest employers in Illinois is the State government. It is constantly hiring men and women at good pay for dignified, honorable work.

Until 1905 the State's employees were chosen by the elected officers and by their appointees without any specified test of fitness. They could employ whom they wished and were generally guided in their selection by political considerations.

In 1905 the first State Civil Service Law was passed, applying only to employees of the charitable institutions, and in 1911 an amendment extended the law to most of the other positions in the State service. The law says the Civil Service Commission shall act as an employment bureau for the State and that State positions are open to *all citizens, no matter what their politics or influence*, who can demonstrate their fitness to do the State's work. Having secured such a position you may retain it so long as you perform your duties well and lead a correct life. You cannot be ousted for political or religious reasons and you are guaranteed by the law a just hearing of your case by unprejudiced officers, if for any cause complaint should be made against you.

At all times the road to higher grades of work with better pay is open.

### WHAT CLASSIFICATION MEANS.

The positions in the service are *classified*. This means a study is made of the duties performed by each employee and the qualifications properly demanded of the applicants for each place. Then all the places which have substantially the same duties and qualifications are given the same civil service title and said to be in the same *grade*.

Thus the whole service is divided into *grades*, and for each *grade* a different examination must be held, because the duties and qualifications in each are different from other *grades*. Some *grades* include only one place of employment, which is the only position of its kind in the service. Some *grades* include many places in different departments. For instance, there is only one Director of the State Geological Survey, but there are many Department Stenographers, Rank III, in the State service. Though in different departments and handling different subjects, these stenographers do substantially the same work, viz: taking and transcribing notes. So the same examination serves to test the fitness of all applicants for employment in this grade in all the departments.

### CHANCE FOR PROMOTION.

Where the work done in one *grade* tends to fit the occupant to fill the next higher position, paying a higher salary, these positions are put in the same *class*, being assigned different *ranks*. When examinations for the higher positions are held, they are open only to persons already in the service in other *grades* of the same *class*, in the same or the next lower *rank*, unless circumstances make it appear that the number of candidates would be very small. When such a state exists, the examination may be thrown open to the general public.

All the *grades* in the service are listed in alphabetical order in the classification booklet printed by the commission. Each *grade* has a title

which indicates its duties, and in the alphabetical list under each title is given the maximum and minimum pay, residence and age restrictions, duties and examination requirements of that *grade*. There is also a reference indicating whether that *grade* is included in a promotional *class*, so the applicant may know the chances of promotion from that *grade*. All the promotional *classes* are listed in another part of the booklet, and the respective *ranks* of all the different *grades* included in them are shown. Each promotion *class* is a ladder, each *rank* is a rung, up which the able and ambitious public servant may climb, step by step.

#### BEST MAN WINS EMPLOYMENT.

Persons who take an examination for employment in a certain *grade* must compete against each other. The law requires the commission to devise an examination which will show who among all the applicants is the best fitted to fill the position sought, who next, and so on. This is accomplished by marking written papers and assigning marks in the oral or practical tests, then averaging the marks of each applicant to get his final rank. In order to pass, the final average must be 70 or over. A list is made up of those over 70, with the names in order of the final average—the high man first, and so on. This is the eligible list. When a vacancy occurs in a place classified as being in that *grade*, the law says the commission must certify the highest person on the list who will accept the place and the appointing officer must give him the job.

#### A FALLACY EXPLODED.

The old idea that only a boy just out of school or college can pass a civil service test, finds no justification in the examinations given by the State Commission. There is always a mark for experience, which does not mean that an applicant for prison guard, for example, must have had experience as a prison guard, but that he must tell what work he has done for years past—just what has been his experience with life—and a mark is given him according to the judgment of the examiner as to how that experience fits him to be a guard, or to fill any other place, as the case may be. The examiners know and always give credit for the ripening effect of work and age.

In the written and oral examinations, the questions relate strictly to the work to be performed. For most skilled labor positions the examinations are practical tests with nothing to be written except a statement of training and experience.

#### HOW TO MAKE APPLICATION.

If you wish to work for the State write to the State Civil Service Commission, Springfield, Ill., asking for an application blank and information regarding examinations. If you have not already a definite position in mind, tell the nature of your training and experience. Information will be sent you as to positions which you might be qualified to fill and an application blank will be furnished you. You will be notified when your examination is called.

This application should be sent at once to the Springfield office, *properly and completely* filled out. It should be there *not less than 10 days before the date set for your examination*. It will be returned if it is not made out in proper form. When received, it is placed with the applications of others who are waiting for the same examination.

#### WHERE EXAMINATIONS ARE HELD.

As soon as a definite date is set for a test, arrangements are made for holding the examination at each of the State hospitals for the insane at Anna, Jacksonville, Peoria (located at the suburb of South Bartonville),



Kankakee, Elgin, Watertown and Chicago (located in suburb of Dunning at west end of Irving Park Boulevard car line), and at other cities conveniently located, usually Chicago, Springfield, Lincoln, Marion, Mt. Vernon, Murphysboro, Urbana and Quincy. In addition to these, tests are frequently held at Golconda, Harrisburg and Fairfield.

Examinations are almost invariably held on the first Saturday of each month and the first advertisements usually go out about five weeks before that time. Notices are sent to all post-offices at county seats and in most cities of 1,000 people or more, to practically all the dailies, and to many of the weekly papers of the State, to all county superintendents of schools, county clerks, and members of the Legislature. Separate mailing lists are also kept of all persons who have notified the commission that they are interested in any particular position and wish to be informed when a test is called for that place.

*A few days before the examination date, a card of admission is sent to each applicant, telling where and when to appear.* The persons in charge at each place have orders to admit *no one* who has not his card of admission.

#### ATTENDANTS, DOMESTICS AND LABORERS.

In addition to the examinations held on the first Saturday of every month, tests for attendants, domestics and laborers at the State hospitals and charitable institutions are held at each of these institutions at 9 a. m. every Saturday. An application may be filled out when you report to take such an examination. These examinations are conducted at:

Anna State Hospital, Anna.  
Chicago State Hospital, Dunning.  
Elgin State Hospital, Elgin.  
Jacksonville State Hospital, Jacksonville.  
Kankakee State Hospital, Kankakee.  
Peoria State Hospital, South Bartonville.  
Watertown State Hospital, Watertown.  
Chester State Hospital, Menard.  
School for the Blind, Jacksonville.  
Industrial Home for the Blind, 1900 Marshall Boulevard, Chicago.  
School for the Deaf, Jacksonville.  
Eye and Ear Infirmary, 904 West Adams Street, Chicago.  
State School and Colony, Lincoln.  
School for Boys, St. Charles.  
Training School for Girls, Geneva.  
Soldiers' & Sailors' Home, Quincy.  
Soldiers' Orphans' Home, Normal.  
Soldiers' Widows' Home, Wilmington.

Similarly, applicants for attendant, domestic, or laborer at any of the State charitable institutions may be examined free of charge at any time by the following physicians who have been appointed representatives of the State Civil Service Commission:

Dr. Chas. F. Brian, Bellmont.	Dr. E. C. Alvis, Kell.
Dr. Charles D. Nobles, Buncombe.	Dr. R. L. Eddington, Lacon.
Dr. B. F. Crain, Carterville.	Dr. Isaac C. Walker, Marion.
Dr. W. P. Sutherland, Creal Springs.	Dr. Geo. W. Walbright, Metropolis.
Dr. F. S. Smith, Cypress.	Dr. E. M. Glasscock, Mill Shoals.
Dr. Joseph M. Dent, Eddyville.	Dr. R. R. Smith, Mt. Vernon.
Dr. H. L. Rodgers, Enfield.	Dr. G. F. Dougherty, Neoga.
Dr. Ezra Phillips, Ewing.	Dr. H. D. LaRue, New Burnside.
Dr. Lewis S. Barger, Golconda.	Dr. J. L. Harrell, Norris City.
Dr. Isaac N. Graves, Goreville.	Dr. Frank Johnson, Omaha.
Dr. F. M. Sanders, Herrin.	Dr. G. B. M. Hill, Paris.
Dr. A. D. Harper, Ina.	Dr. L. A. Coley, Pittsfield.
Dr. J. J. Lence, Jonesboro.	Dr. Wm. A. Sim, Rosebud.
Dr. Chas. E. Tucker, Joppa.	Dr. W. J. J. Paris, Rosiclare.
Dr. Thos. E. McCall, Vienna.	Dr. A. S. Artin, Springerton.
Dr. J. T. Joiner, Karbers' Ridge.	Dr. James E. Dixon, Sims.

### ABOUT AGE LIMITS, ETC.

Ordinarily the minimum age limit for men is 21 years, and for women 18. Such limits are always announced before the examination.

*Male hospital attendants* must be 21 years of age, not less than 5 feet 4 inches high and of not less than 135 pounds weight.

*Female attendants and domestics* must be 18 years of age, not less than 5 feet high and 115 pounds weight.

*Laborers* must be over 19 years with the weight and height the same as for attendants.

*Penitentiary guards* must be between 25 and 55 years of age, weigh at least 150 pounds and be not less than 5 feet 7 inches tall.

Other limitations are fixed when thought necessary and the candidate is furnished complete information on all these points.

### BE SURE TO PREPARE YOURSELF.

It will help you if you will make some preparation for the examination beforehand. The hours spent in preparing for the test and the method you use in preparing are extremely important.

First get a broad view of the duties and responsibilities of the position you want. Learn its relation to the other positions in the same department and to the service at large. Then be sure that you know thoroughly the details of the position itself.

An examination is usually divided into two general parts, which are (a) questions on education and experience, (b) questions relating strictly to the work of the position sought, either oral or written or both. Sometimes a physical test is added. Practical tests are frequently used.

You can save a great amount of time and better your chances of success if you take the right way to prepare for the examination.

### HOW TO STATE EXPERIENCE.

Write out a statement covering in detail your education and the positions you have filled since you left school. Be sure to say how far you went in school, indicating the courses of study taken. Tell the kind of work done in each position, who your employer was, his present address if possible, and the salary you received. Now include any special studies or experiences you have gone through which would particularly fit you for the position sought.

After writing this statement, go over it, boiling it down, cutting out unimportant matters, emphasizing valuable points, so that everything is given in the least possible number of words, but yet none of the strength of statement is lost. Have this practically memorized, so that very little time need be spent on it at the examination and attention can be given to the other sets of questions, for which you have not been able to prepare so easily.

### STUDY DUTIES OF POSITION.

The special subjects to be taken up are ordinarily outlined in the advertising matter regarding the examination. If the applicant is at all fitted by training or experience, or both, for the position, he will know its important duties. He will then prepare himself on the things which he deems of fundamental importance, the stenographer practicing for speed, the clerk on arithmetic and penmanship, the electrician on the underwriter's standards, and so on.

It is far better to have a thorough knowledge of the underlying principles than to have a smattering of knowledge scattered here and there among all the various phases of the work that comes with each position. The examiner will always assume that if the applicant has the ground work, it will be easy enough for him to learn the details of the particular position to which he may be assigned.



The nature of the general questions will depend on the position for which the examination is given. Think over the duties of the place. It will not be hard to guess closely as to those questions. The stenographer will be asked regarding spelling and English grammar, the clerk on ordinary office methods and letter writing.

#### MAKE THE BEST USE OF YOUR TIME.

The last important point in preparing for an examination must be observed just before the writing of the answers to the questions. Decide in your own mind the relative values of the different sets of questions. In accordance with their importance, assign to each the number of hours or minutes which are to be used in answering the questions.

Even a slight deviation from the schedule will probably result in decreased efficiency as far as the whole examination is concerned. In the same way take each set of questions as it is given out. Pick out the important questions and make sure that sufficient time is allotted to them so that valuable minutes will not be given to minor matters.

#### EXPERTS MAKE UP QUESTIONS.

The Civil Service Commission itself very seldom makes up the questions used in an examination. It secures men who are experts in each particular line and who can have no personal interest in the results of the test. For instance, an expert civil engineer working for the United States Government handles the examinations for some of the positions under the State Highway Commission, making up the questions and grading the papers afterward. A board made up of some of the best known physicians and surgeons passes on the qualifications of applicants for positions in the medical service. The judgment of these men, when taken in connection with information secured from former employers, decides the standing of the applicant.

#### NAMES OF CANDIDATES SEALED UP.

So that the examiner cannot know whose papers he is grading, a number is assigned to each candidate. He writes his name on a sheet furnished for that purpose and seals it in an envelope. On the envelope is a number which he puts on each sheet of examination papers. The papers are sent to the examiner for grading. He does not know whose paper he is marking. After he sends the final averages back to the commission, the envelopes are opened and the names are placed opposite the grades.

References are looked up on those who made a passing grade of 70 per cent or more. The names of the successful ones are placed on an eligible list and each candidate is notified of his standing. Vacancies are then filled by the appointment of persons in the order of their standing on the list.

Very frequently two and sometimes three months elapse between the examination and the announcing of the eligible list. This occurs because many hundred letters are sent to former employers of applicants and to other references given by them, and these people frequently neglect to answer the commission's letters thus delaying matters badly.

#### OPENINGS IN THE STATE SERVICE.

About 5,000 State positions are now filled by civil service examinations and a large proportion receive salaries ranging from \$100 to \$300 per month. There are places for workers with all degrees of preparation and experience.

*College graduates* find that such positions as Corporation Assistant, Road Engineer, Secretary of the Rivers and Lakes Commission, Physician-general, Supervisor of High Schools, and Assistant State Veterinarian call for technical training and offer a commensurate reward.

*Graduates of good high schools* are eligible for such positions as Assistant Examiner, House Officer, Inspector of Pharmacies, Bookkeeper, Deputy Fire Marshal, and Securities Clerk.

*Those without high school training* are able to fill positions such as Messenger, Filing Clerk, Department Clerk, Reimbursing Investigator, Parole Agent, Deputy Game Warden, Grain Sampler, Clerk, Guard, and Proof Reader.

*In examinations for skilled laborers*, such as Stationary Engineer, Plumber, Carpenter, Painter, and Assistant Electrician, knowledge of the trade is worth far more than book learning. Such positions as Elevator Conductor, Watchman, Janitor, Attendant, Laborer, and Domestic, are filled largely by those who have little school training or experience in a trade.

### OPPORTUNITIES FOR WOMEN.

The commission recognizes the part played by women in the modern industrial world and consistently admits them to examinations. In recent months an increasing number of women have entered the examinations for the higher salaried positions.

Women almost monopolize the nursing service and stenographic positions. They act as investigators of private employment agencies, bookkeepers in the various State institutions and departments, physicians in the hospitals for the insane, chemists for the Food Commission, librarians, teachers and principals of schools and hundreds of other clerical positions are open to women.

### THE STATE'S BIG INSTITUTIONS.

There are 23 great State institutions in Illinois. Twenty of them are known as charitable institutions. Two of them are prisons, one of them a reformatory. They employ more than 3,000 persons who are under civil service; that is, they secure their positions on competitive examinations and hold them during good behaviour and efficient service.

In order to give its employees every opportunity to become serviceable and useful not only to the State but to themselves, the State affords means for education without interfering with earning capacity.

### THEIR LOCATIONS AND PURPOSES.

These institutions are scattered over the State so that no city or town is located a great distance from one of them. The following is a list of the cities where institutions are located:

Watertown; State Hospital for Insane with 1,600 patients and 300 employees. (Near Rock Island and Moline.)

Chicago; State Hospital for Insane with 2,600 patients and 450 employees.

Chicago; Illinois Charitable Eye and Ear Infirmary with 40,000 cases a year of eye, ear, throat and nose diseases, all treated free.

Chicago; Industrial Home for the Blind.

Elgin; State Hospital for Insane with 1,600 patients and 300 employees.

Kankakee; State Hospital for Insane with 3,000 patients and 600 employees.

Jacksonville; State Hospital for Insane with 1,600 patients and 300 employees.

Peoria; State Hospital for Insane with 2,200 patients and 400 employees.

Anna; State Hospital for Insane with 1,500 patients and 300 employees.

Chester; State Hospital for Criminal Insane, with 250 patients and 75 employees.

Lincoln; State School and Colony with 1,500 inmates and 300 employees.

Normal; Soldiers' Orphans' Home with 300 children and 75 employees.

Wilmington; Soldiers' Widows' Home with 80 inmates and 20 employees.

Geneva; State Training School for Girls with 500 girls and 100 employees.



St. Charles; State School for Boys with 550 boys and 100 employees.  
 Jacksonville; State School for the Blind with 200 pupils and 50 employees.

Jacksonville; State School for the Deaf with 500 pupils and 150 employees.

Quincy; Soldiers' and Sailors' Home with 1,500 inmates and 100 employees.

Alton; State Hospital for Insane, capacity 1,500; not yet ready to receive patients.

Dixon; State Colony for Epileptics; not yet built.

Joliet; State Penitentiary with 1,500 prisoners and 120 employees.

Chester; State Penitentiary with 1,500 prisoners and 107 employees.

Pontiac; State Reformatory with 700 boys and 106 employees.

The following State departments have employees under civil service:

Board of Administration, Springfield.

Board of Agriculture, Springfield.

Inspector of Apiaries, Putnam.

Board of Arbitration, Springfield.

Examiners of Architects, Chicago, 178 West Jackson Boulevard.

Attorney-General, Springfield, and 934 Otis Building, Chicago.

Auditor of Public Accounts, Springfield, and 808 Otis Building, Chicago.

Barbers' Examiners, 302 Ft. Dearborn Building, Chicago.

Biological Laboratory, Springfield.

Canal Commission, Illinois and Michigan, Lockport.

Charities Commission, Springfield.

Civil Service Commission, Springfield, and 1542 Transportation Building, Chicago.

Dental Examiners, Springfield.

Eastern Normal School, Charleston.

Employment Agencies, Licensed, 732 South Wabash Avenue, Chicago.

Entomologist, State, Urbana.

Executive Department, Springfield.

Factory Inspection, 1543, 608 South Dearborn Street, Chicago.

Farmers' Institute, Springfield.

Fire Marshal, Springfield.

Food Commissioner, 1627 Manhattan Building, Chicago.

Fort Massac, Metropolis.

Free Employment Office, 732 South Wabash Avenue, Chicago.

Free Employment Office, 826 North Clark Street, Chicago.

Free Employment Office, 560 West Randolph Street, Chicago.

Free Employment Office, 512 South Adams Street, Peoria.

Free Employment Office, 107 Kishwaukee Street, Rockford.

Free Employment Office, 307½ South Sixth Street, Springfield.

Free Employment Office, Main Street and Division Avenue, East St. Louis.

Game and Fish Conservation Commission, Springfield.

Geological Survey, Urbana.

Grain Inspection, 708 Insurance Exchange, Chicago.

Grain Inspection, East St. Louis.

Health, Board of, Springfield.

Highway Commission, Springfield.

Historical Library, Springfield.

Industrial Board, City Hall Square Building, Chicago.

Insurance Department, Springfield.

Labor Statistics, Bureau of, Springfield.

Laboratory of Natural History, Urbana.

Library Extension Commission, Springfield.

Library, State, Springfield.

Lieutenant Governor, Springfield.

Lincoln Homestead, Springfield.

Lincoln Monument, Springfield.

Live Stock Commission, Springfield.

Mine Rescue Commission, (head office), Springfield.

Mine Rescue Station, Benton.

Mine Rescue Station, LaSalle.  
 Mining Board, Springfield.  
 Natural History Museum, Springfield.  
 Normal University, Normal.  
 Northern Normal School, DeKalb.  
 Nurses, Examiners of Registered, Springfield.  
 Pardons, Board of, Springfield.  
 Park Commission, Ottawa.  
 Pharmacy, Board of, Springfield.  
 Printer Expert, Springfield.  
 Prison Industries, Board of, Springfield.  
 Public Instruction, Superintendent of, Springfield.  
 Rivers and Lakes Commission, 1534, 608 South Dearborn Street, Chicago.  
 Secretary of State, Springfield.  
 Secretary of State; Chauffeur Examiners, 336, 608 South Dearborn Street, Chicago.  
 Southern Normal School, Carbondale.  
 Stallion Registration, Board of, Springfield.  
 Supreme Court, Springfield.  
 Treasurer, State, Springfield.  
 University of Illinois, Urbana.  
 Utilities Commission, Public, Springfield.  
 Western Normal School, Macomb.

In the following pages, which will describe in general the methods followed in examinations, will be found many typical questions selected from examinations which the commission has given. Do not make the mistake of assuming that these identical questions will be used again. Read them, rather, as a means of learning the probable scope of coming examinations and as a basis for study.

CHAPTER II.

TRAINING AND EXPERIENCE.

Sometimes one set of questions is used to cover "Training and Experience," sometimes two. In either case, the purpose is the same, to learn how well your education and the work you have done previous to the examination fit you to take up the duties of the position sought.

By referring to Chapter I, page 8, of this Manual, you will find suggestions on preparing for this portion of the examination. Careful observance of what is said there will prove a big help. Typical questions follow:

DEPARTMENT CLERK, RANK III.

Training.—(Fill in all blanks necessary to show your school training.) State your age.

I completed the ..... grade in common school at (city)..... in (year) .....

I entered High School or Academy at (city) ..... in (year) ..... and completed ..... years' work. I graduated in (year).....

I entered ..... Commercial School (city and state) ..... in (year) ..... and completed ..... months' work in ..... course. I graduated in (year) .....

I enrolled in the ..... Correspondence School (city) ..... (state) ..... in (year) ..... taking a course in ..... I graduated in (year).....

Mention any additional studies or work (in or out of school) that have fitted you for the position of Department Clerk.

Experience.—(Candidate will be graded from information given in the following form):

1. I was employed chiefly as ..... by ..... of ..... during the years from 1903 to 1908. (address)

2.

				Employees			
Date	Em- ployer.	Employer's address.	Posi- tion held.	super- vised.	Date resigned.	Salary.	
1908	.....	.....	.....	.....	.....	.....	
1909	.....	.....	.....	.....	.....	.....	
1910	.....	.....	.....	.....	.....	.....	
1911	.....	.....	.....	.....	.....	.....	
1912	.....	.....	.....	.....	.....	.....	
1913	.....	.....	.....	.....	.....	.....	
1914	.....	.....	.....	.....	.....	.....	

3. What has been the extent of your experience:
- (a) As correspondent .....
  - (b) As bookkeeper .....
  - (c) Operating a typewriter .....
  - (d) Operating an adding machine .....
  - (e) Operating a comptometer .....
  - (f) Filing correspondence .....
4. Name any other experience that would tend to fit you for the position of department clerk.
5. Were you ever discharged from a position? If so, why?



**STATIONARY ENGINEER.**

*Training and Experience.*—(1) Give your age, height and weight, and tell whether you are married. (2) Where are you now employed and in what capacity? What is your present salary? (3) State as nearly as possible all positions you have held since you were 21 years old, naming the firms or employers for whom you have worked, the length of time in each place and the position occupied. (4) Have you ever been discharged from any position? If so, why? (5) What classes of engines have you handled? State makes, sizes, simple, compound, or compound condensing; also the classes of work the engines were doing. (6) What experience have you had with electrical machinery and equipment? State fully. (7) What experience have you had with refrigerating machinery? (8) What experience have you had with heating and ventilating apparatus? (9) What experience have you had as fireman? (10) What experience have you had as machinist? (11) Do you understand that failure to notify the State Civil Service Commission of changes in your address will be sufficient reason for dropping your name from an eligible list?

**MINE RESCUE ASSISTANT.**

*Training and Experience.*—(1) What is your age, height, and weight? (2) How far did you go in school? (3) State all the positions about a mine that you have filled and the approximate amount of time you held each position. (4) Give the names and addresses of your employers for the past five years and the positions you held under each. (5) (In answering the following questions, be sure to name the State or Government that issued the certificate; give its date as near as you can; tell where, when, and for how long you received instruction in each case.) (a) Have you a certificate of proficiency in first aid training? (b) In mine rescue training? (c) In helmet work? (d) What other State or Government certificates have you received? (6) What experience have you had in rendering first aid to the injured? (7) What experience have you had in entering and exploring a mine after an accident? (8) Do you understand that failure to inform the commission of a change in your address will be sufficient reason for dropping your name from any eligible register?



## CHAPTER III.

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### CLERICAL POSITIONS.

Practically every department and institution contains some clerical position. Large numbers of applicants appear at each examination and consequently it usually takes longer to grade all the papers and announce the results than in the case of other tests.

Ordinarily in examinations for this kind of position, the training and experience of the applicant is given a weight of 3 points out of 10. Sometimes, as in the case of the department bookkeeper examination, a weight of 4 is given because the number of well qualified applicants is large and the openings are usually infrequent. Following the part relating to training and experience are sets of questions, each dealing with some one phase of the duties of the position or of the qualifications needed in a person fitted to fill the place. For instance, a few general educational questions are included in the filing clerk examination as it is felt that here the fund of general information possessed by the candidate is valuable in determining his standing among all the applicants. Knowledge of arithmetic is essential to a bookkeeper just as familiarity with the usual methods of handling correspondence is important to a department clerk. The weights assigned these parts of the examination seldom run above 3 points out of a total of 10. Penmanship is frequently graded from the answers to some one set of questions, usually from those on training and experience.

*Opportunities for promotion.*—An idea of the opportunities for promotion in clerical positions may be obtained from the classification. Most of these positions are included in Promotion Classes A (Department Office Service) and B (Institution Office Service). The salaries in the higher ranks reach \$200 per month without maintenance and \$140 per month with maintenance.

### SAMPLE QUESTIONS.

Following are the subjects and weights which have been used in four recent typical examinations, with the questions put to the candidates. The questions on training and experience are not shown as they are outlined in Chapter II.

#### DEPARTMENT CLERK, RANK III.

*Scope and weights.*—Training and experience, 3; handling correspondence, 2; duties, 3; statistics and arithmetic, 2.

*Handling correspondence.*—1. What precautions would you take in order to safeguard your own as well as the time of the stenographic force when starting to answer several inquiries? 2. Make up a set of rules to follow while writing or dictating a business letter. 3. Write a letter of complaint to an express company in regard to a package from Chicago two weeks over-due in Springfield. 4. Assume that you are a clerk in the office of the Highway Commission and that you find it necessary to answer a letter which complains of the delay of payment for supplies purchased by that commission. Assume that a voucher has already passed out of your office authorizing payment. State how you would investigate the matter. Write a complete letter showing your reply to the complainant. 5. Name one system of filing correspondence and give any advantages that it has over other systems.

*Duties.*—1. Explain briefly the following terms: budget, invoice, consignee, license, voucher, requisition, inventory, warrant, contingent fund, depreciation. 2. Arrange the following list of trades into allied groups, as “Contracting and Building,” “Manufacturing,” “Railroading,” etc. Use not more than eight groups and name each group what you wish. You will be marked on your ingenuity in classification. Arrange the trades in alphabetical order under each heading that you choose. This is to test your ability in preparing a tabulated report. Farm hand, bricklayers, stone masons, paint makers, glass workers, bookkeepers, gardeners, carpenters, sugar beet workers, hod carriers, accountants, custom tailors, domestics, chambermaids, harness and saddle makers, blacksmiths, printers, electricians, brakemen, shoe workers, machinists, track and tie layers, brewers, cooks, pantry and linen girls, stenographers, boilermakers, metal polishers, tannery workers, machine hands, trunk makers, housekeepers, laundrymen. 3. Name three modern office appliances which may be driven by electricity. 4. Correct all errors in grammar, spelling, punctuation and capitalization, in the following: Do not add or subtract from article.—There are a good deal of Speckulation on the part of the Public as to the dutys of a reimbursing investigator. Few peeple have come into acktual contact with him. Yet many have hear something of the work he have been doing for the State.—During the first year of there operations, their were only 2 investigators and they done a splendid work altho hampered with a small appropriation for clerical help and travelling expenses: they recoevered over \$200,000.00 for the state.—Now their are eight investigators including one at each Insane Hospital. The compulsary support of inmates aplies only to the insane but their seems to be no good reason why the law should not also be amended so as to aply to the deaf and blind as well as to the epilepticks and the feeble minded. Perhaps this shall happen when the peeple shall wake up to how much there tax burdens are being lightened by the work of our reimbursing investigators.

*Statistics and Arithmetic.*—1. (a) The U. S. Census returns give the population of Illinois in 1900 as 4,821,550, and in 1910 as 5,638,591. Use these figures to estimate the population of Illinois for the year 1906. (b) With the same rate of increase as occurred from 1900 to 1910, estimate the population for the year 1914. 2. A manufacturer sells to a wholesaler at 20 per cent gain; the wholesaler to the retailer at 25 per cent gain, and the retailer to the consumer at 60 per cent gain. Find the cost to the manufacturer of an article for which the consumer pays \$14.40. 3. Suppose you are a department clerk and are asked to make out a pay-roll for a department which has employed the following persons during the month of September, 1914: Martin Madison, secretary (full month) \$200. John Smith, bookkeeper, (full month) \$1,000 per annum. Fred Clark, department clerk, \$95 a month. James Brown, inspector, \$4 per day, exclusive of Sundays. Helen Jones, stenographer, from September 1 to September 12, inclusive, \$85 a month. Alice Larsen, began September 14, and worked balance of month at \$75 a month. Mary Daniels, filing clerk, full time, \$75 a month. Arthur Jackson, messenger, (off on leave of absence without pay, two days, September 21 and 22) at \$70 a month.

#### FILING CLERK.

*Scope and weights.*—Training and experience, 3; report, 2; qualifications and duties, 3; educational, 2; physical examination.

*Report.*—Describe in not less than 300 words one system of filing and referring to correspondence in a large office. In this description give full and complete details, tell the advantages and disadvantages of the system, and show how the permanent files may be kept up to date and free from matter of only temporary value.

*Qualifications and duties.*—1. What do you consider the most important qualifications in a filing clerk? 2. Name two firms that manufacture supplies such as are used in filing, and tell briefly the line of supplies furnished by each. 3. What do you consider the best method of securing copies of outgoing letters? Give all its advantages you know. 4. What is cross indexing? Illustrate. 5. Describe a method of handling copies of letters containing matter which must be followed up at a later date, so that the



files will be kept fully up to date and the matter referred to will be sure to be taken up at the proper time. 6. What are the advantages and disadvantages of the alphabetical system of filing? 7. What are the advantages and disadvantages of the numerical system of filing? 8. Name at least three labor and time saving devices used in offices, and give the use of each. 9. Make an exact copy of the following (you will be marked on accuracy and penmanship): Section 1. (Statute, Section 6.) Who May Apply—All applicants for offices or places in said classified service, except those mentioned in section 11 hereof, shall be subject to examination, which shall be public, competitive, and free to all citizens of the State of Illinois who may be lawfully appointed to any office or place in the service of the State of Illinois with limitations specified in the rules of the commission as to residence, age, sex, health, habits, moral character, and qualifications to perform the duties of the office or place to be filled.

*Educational.*—1. A note for \$760, dated May 24, 1914, drew 7 per cent interest. What amount was due July 24, 1914? 2. Explain briefly two of the following: (a) The commission form of government. (b) The initiative and referendum. (c) City manager. 3. Locate each of the following: (a) Corn belt. (b) Cotton belt. (c) Wheat belt. 4 and 5. Arrange the following in exact alphabetical order as they should appear in the files or in an index: Ottawa Cold Storage Co.; R. V. Manufacturing Co.; Springfield Hay Tool Co.; Ingram-Day Lumber Co.; Anthony Co-Operative Creamer Assn.; Ingram Lumber Co.; East St. Louis Butter Co.; DeForest Opera House Co.; Southern Historical Assn.; Moody-Baker-Elliott Co.; R. B. of A. Building Assn.; Moodt Transfer Co.; Southwest Kissel Kar Branch; O. H. Ingram Co.; Golden Gate Mining Co.; Northeast Realty Co.; S. Freeman & Sons Mfg. Co.; Chicago & Eastern Ill. R. R.; Illinois Hardware Mfg. Co.; Anthony Cooperage Co.; Illinois Ice Cream Assn.; W. J. Moore Co.; Rock River Improvement Co.; The Illinois Coal Co.; Illinois Realty Assn.; Northern Agricultural Company; Illinois Central Railroad Co.; Illinois Traction Co.; John Deere Co.; Illinois Hotel Assn.; A. A. Lloyd and Son; Calumet & Hecla.

## CHIEF CLERK.

*Scope and weights.*—Training and experience, 3; accounting and book-keeping, 2; laws and rules governing State institutions and departments, 2; duties, 3.

*Accounting and bookkeeping.*—1. What is the basic principle of book-keeping? 2. Differentiate between double and single entry bookkeeping. 3. State what books you would require for properly keeping the accounts of a large charitable institution, giving the principal uses of each. 4. Explain the workings of the voucher system of bookkeeping and give its chief advantages. 5. What is another person's note in your favor called? 6. If the credit side of merchandise account after the inventory had been entered were smaller, would it show a gain or loss? 7. What system of accounting would you install in a department where salaries are appropriated in fixed amounts and a lump sum allowed for all other expenses? (Illustration may supplement answer.) 8. What method would you use in accounting for petty cash fund? 9. From what sources would entries generally originate that are contained in an "Accounts-Receivable" ledger? 10. Name the sources from which the State secures its revenues and through what process they come.

*Laws and rules governing State institutions and departments.*—1. (a) What purpose is the charities organization of the State designed to accomplish? (b) Enumerate the boards, commissions, and institutions created by law to accomplish this purpose. 2. (a) What powers and duties are by law vested in the Board of Administration? (b) Over what institutions and departments does it have control? 3. Mention the purpose and scope of the law governing appointments of employees in the State institutions and departments. 4. Outline the relation of the Board of Prison Industries to other State departments and institutions. 5. What are the duties outlined in the law governing the relations of the Secretary of State with the

Governor? 6. List the State departments created by the Constitution and briefly outline the duties of each. 7. To what State departments are police powers given? 8. (a) Define "Right of Eminent Domain." (b) What State department is vested with such rights?

*Duties.*—1. Outline a system of organization of a complete clerical force necessary to handle effectively the work of the Illinois Utilities Commission requiring the services of 25 persons at a combined annual salary of \$43,600, designating the principal duties of each group of employees with the annual salary allotted to each. 2. (a) Devise a plan for following up correspondence at the same time keeping files up to date. (b) Devise a plan for avoiding duplicate payments of accounts from petty cash fund. 3. (a) As chief clerk of an institution having approximately 500 employees, some paid on monthly basis, some weekly, and others on a daily basis, what office records would be necessary in order to make up your monthly pay-roll? (b) Would you make any or all such payments by cash or check? Why? 4. By what process would you raise the standard of efficiency of 10 stenographers working under your direct supervision? 5. What method would you adopt in keeping account of office supplies and stationery required and used by a large department? 6. What procedure would you adopt in complying with rules of the Board of Administration in compiling an institution's, (a) monthly estimates of supplies? (b) quarterly financial report? (c) biennial financial report? 7. Trace a demand for food supplies from its inception to receipt in payment of same.

#### DEPARTMENT BOOKKEEPER.

*Scope and weights.*—Training and experience, 4; arithmetic, 2; office methods, 1; bookkeeping, 3.

*Arithmetic.*—1. A note for \$675 is dated January 16, 1913. What amount is now due, money being worth 7 per cent? 2. The sales of a dry goods house for one week were as follows: Monday, domestics, \$540.10; notions, \$325.85; woolens, \$864.98; dress goods, \$325.78. Tuesday, domestics, \$995.85; notions, \$419.62; woolens, \$919.10; dress goods, \$146.84. Wednesday, domestics, \$975.89; notions, \$853.64; woolens, \$1,659.89; dress goods, \$1,259.89. Thursday, domestics, \$856.74; notions, \$459.13; woolens, \$756.85; dress goods, \$588.74. Friday, domestics, \$882.47; notions, \$817.39; woolens, \$1,249.86; dress goods, \$1,560.84. Saturday, domestics, \$1,529.84; notions, \$915.62; woolens, \$958.22; dress goods, \$1,079.54. Arrange these facts in tabular form so as to show: (a) The total sales for each department, (b) the total daily sales, and (c) the total sales for the week. 3. Compute and make out the following bill in form to present: J. A. Lake bought of Ganty & Frandson, wholesale grocers in Chicago, July 2, 1914, 328 pounds of sugar at \$4.18 per 100 pounds; 2 boxes of herring at 75 cents per box; 7 gross of candles at 5 cents a dozen; 200 oranges, at 10 cents a dozen; 3 tubs of butter, each containing 28½ pounds, at 35 cents a pound. A special discount of 10 per cent is allowed, with 5 per cent off for cash. 4. David Evans handed the following invoice to his bookkeeper, stating that he wished to make 15 per cent profit, and that he would pay cash. Complete the invoice and give the figure at which each chair should be marked. Chicago, June 18, 1914. Terms 2/10. David Evans, Joliet, Ill., bought of Dennet & Pritz, 40 No. 376 A. chairs at \$7.75. Less special discount 10 per cent. Freight prepaid, \$10.45. 5. Which is the cheaper, and how much, on a bill of \$675, a discount series of 25 per cent, 20 per cent, and 2 per cent, or a discount series of 30 per cent, 10 per cent, and 2 per cent. 6. A boat load of 8,400 bushels of wheat, worth 90 cents per bushel, is insured for three-fourths of its value at 1⅓ per cent premium. In case of total destruction of the wheat, what is the owner's loss?

*Office methods.*—1. How would you avoid making duplicate payments from the petty cash fund? 2. What are the advantages and disadvantages of making payments by check? 3. Describe in detail (with diagrams or drawings if you desire) a good system of keeping account of office supplies received and distributed. 4. Describe three ways of endorsing a check and explain the force of each. 5. Describe a plan for following up correspondence, at the same time keeping the files up to date. 6. Describe in detail



one method of filing letters and correspondence, and give its advantages and disadvantages.

*Bookkeeping.*—1. State in detail what you would do on taking a position as department bookkeeper. 2. Sketch a suitable form for a cash book, providing for a sectionalized ledger. 3. State what you understand by these terms: (a) Revenue; (b) Receipts. Wherein do they differ? 4. What do you consider the advantages and disadvantages of a card system ledger as compared with a loose-leaf system? 5. Explain fully the workings of the voucher system of accounting. 6. A, B, and C form a partnership with a capital of \$72,000. A invests \$40,000, B \$20,000, and C \$12,000. They take 5 per cent per annum on capital, and divide profits or losses in proportion to capital invested. At the end of the year, their trial balance is as follows: Debits, land \$5,000, buildings \$20,000; machinery \$6,600; investments \$10,500, good will \$20,000, drawing account A \$1,520; drawing account B \$1,200, drawing account C \$1,175, cash in bank \$3,500, cash in safe \$377.47, bills receivable \$1,790.50, accounts receivable \$7,260.22, purchases \$37,070, salaries and wages \$12,500, discounts \$125, bad debts \$1,125, sundry expenses \$13,012.57, total \$142,755.76; credits, partners' capital \$72,000, bills payable \$2,600, accounts payable \$8,405.76, sales \$59,750, total \$142,755.76. The value of the goods on hand at the end of the year is \$24,000. Prepare their balance sheet or statement, their profit and loss account, and capital accounts. Charge no interest on drawings, allow 2 per cent per annum depreciation on buildings,  $7\frac{1}{2}$  per cent on machinery, and 6 per cent appreciation on lands.

## CHAPTER IV.

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### STENOGRAPHIC POSITIONS.

Good stenographers are nearly always in demand in State offices. Most of the positions carry salaries slightly higher than are usually paid in business houses, but the care, neatness, and accuracy demanded in the work of the State employee is correspondingly higher. There are various kinds of stenographic positions in the different departments. Most of them require ability to take dictation at 115 words a minute and pay \$75 a month at the start. Institution stenographers receive \$45 and full maintenance (room, board, and washing) at the start and must take dictation at 90 words a minute. The University of Illinois requires that its stenographers be high school graduates or have an equivalent training. For a few secretarial positions at the University, college graduation and familiarity with French and German is required.

The applicant's training and experience usually counts 3 points out of 10 in stenographic examinations. The rest of the examination consists of taking and transcribing dictation, copying plain and rough draft, with some inquiry into penmanship and spelling.

*Opportunities for promotion.*—An idea of the opportunities for promotion in stenographic positions may be obtained from the classification. Most of these positions are included in Promotion Classes A (Department Office Service), and B (Institution Office Service). The salaries in the higher ranks of these classes reach \$200 per month without maintenance and \$140 per month with maintenance.

### SAMPLE QUESTIONS.

Typical questions, not including training and experience:

#### DEPARTMENT STENOGRAPHER, RANK II.

*Scope and weights.*—Training and experience, 3; stenography, 3; type-writing, 2; arithmetic,  $\frac{1}{2}$ ; spelling,  $\frac{1}{2}$ ; duties,  $\frac{1}{2}$ ; letter writing and penmanship,  $\frac{1}{2}$ .

*Dictation* (at 90 words a minute):

*Mr. K. B. Howe, President, Kankakee & Southern Ry., Kankakee, Ill.*

DEAR SIR: This will inform you that your presence is required before the State Public Utilities Commission, at its Springfield office at 10 a. m. on Friday, February 27, 1914, at which time and place the commission will consider any statements you care to make regarding the need of a direct connection with the Big Four Ry., at Danville, Ill.

Respectfully yours,

*Miss Rose Stewart, 6320 S. Monroe Avenue, Chicago, Ill.*

DEAR MADAM: Receipt is acknowledged of your letter of February 20, in which you mention that your club wishes information regarding the work of this commission. I desire very much to secure coöperation of all such clubs in Illinois and have accordingly sent you under separate cover copies of the law and rules under which we operate, together with the last report of the commission. If such coöperation can be secured throughout Illinois, I believe that a great advance toward better government will have been effected.

Yours respectfully,

*Mr. E. M. Allen, Warden, Illinois State Penitentiary, Joliet, Ill.*

DEAR SIR: Your payroll for January has been checked and forwarded to the Auditor of Public Accounts. Corrections were found necessary as follows: Pay for James White reduced from \$60 to \$55 per month, as he has not yet finished the 3 months' probation period. Pay for Henry Lewis disapproved entirely, as the permit covering his temporary employment has not been renewed.

Yours truly,

*Mr. Thomas Rankin, 322 Bridge Building, East St. Louis, Ill.*

DEAR SIR: Your expense account is returned herewith for correction. Permit me to call to your attention that the rules of the Governor's office require that a receipt accompany each item of \$1 or more except in the case of railroad or Pullman fares. It is not permissible to make charges for meals at towns where there are State institutions. Please arrange your itinerary so as to reduce your mileage to a minimum.

Yours very truly,

*Plain copy.*—(Copy the following exactly, preserving form, punctuation, and alignment.)

The following table gives a brief summary showing appointments made during the year 1911 in positions where frequent vacancies are occurring, with the addition of all certifications made during the year from reinstatement lists.

TABLE V.

APPOINTMENTS.

Examination.	Number on list.	Number of certifi- cations.	Number of appoint- ments.
Art teacher .....	3	2	2
Attendant (insane) .....	467	434	421
Carpenter .....	41	5	3
Domestic .....	120	124	96
Fireman .....	38	65	19
Grain Helper .....	56	0	0
Laborer .....	102	91	44
Painter .....	32	13	0
Seamstress .....	15	7	4
Stenographer .....	39	5	0
Typist .....	16	2	2
Watchman .....	19	5	3

During the past year, 1,115 temporary appointments were made, 838 because there was no eligible list extant for the position in question, and 277 because the employment was essentially temporary or transitory in nature. On December 31, 1911, there were still in the service 264 temporary employees, and of those 225 were at the University of Illinois. This large number at one institution results from two causes. During the winter months many laborers, more or less skilled, are employed in the Engineering and Agricultural Experimental Stations work. Their employment is never permanent in nature and it would be improper to send regular eligibles to these positions. The second reason is that the salaries given in other positions are so small that it is frequently necessary to appoint employees subject to later examinations, as regular eligibles refuse to accept the small salaries. The temporary appointment question is discussed more fully in another paragraph.



Rough draft.

Directions: Rearrange the rough draft below, making the corrections as indicated, so that the letter will be in the form the writer intended it should be. Absolute accuracy is required.

Springfield, January 28<sup>th</sup>, 1913

H. L. Dean, *Relay Building*  
Secy. Bldg. Laws Comm. *Commission*,  
Urbana, Illinois.

Dear *Sir* Mr. Dean: *which your Commission proposes to submit*

The draught of the bill on ~~Building Construction~~ *Building* has *been read*; ~~reached me~~ and, after a hurried perusal of its contents I find that I desire more *detailed* information on these *following* points.

(b) ~~the~~ *number* No. of Inspectors *Needed*. The bill provides for fifteen inspectors *only* ~~and~~ *would* it seem that you have ~~not~~ estimated the force necessary as the City of Chicago alone finds difficulty in *making proper* ~~inspecting properly~~ *with* ~~and they have forty men.~~

(a) ~~the~~ Conflict with Municipal Ordinances In Force. Is it the intention of your ~~body~~ *body* to entirely do away with the ~~present~~ *Now* systems of inspection in the State, or is it intended to have the law apply to cities and towns where ~~they have~~ *there is* no inspection at present? *villages* *Communes*

(c) Cost of Maintenance. It appears that the cost of enforcing the law will be out of proportion to the income ~~from~~ *very* building permits. *to me*

Yours *very* truly

*new building* *now in vogue* *certain cities of* *the larger cities are omitted*

(The above exercises in typewriting are graded on speed as well as accuracy.)

Arithmetic.—1. Find the gain on each of the following items and the total gain:

Selling price.	Cost.	Gain.
\$32,000.00	\$27,621.00	.....
57,640.33	48,924.29	.....
9,437.00	4,819.22	.....
89,754.21	78,947.35	.....
2,341.58	1,838.69	.....

Total, \$

2. Give the cost of 2½ gross note books at rate of \$4.25 per hundred.  
3. Add: 1/7 + 2/9 + 3/4. Multiply 5/6 by 1/8.  
4. Find the total amount due on a note of \$624 running 3 years and 1 month with interest at 6½ per cent.

Spelling.

- |                   |                 |
|-------------------|-----------------|
| 1. excellent.     | 5. serviceable. |
| 2. forcible.      | 6. benefited.   |
| 3. hoping.        | 7. confidence.  |
| 4. indispensable. | 8. equivalent.  |



- |                   |                  |
|-------------------|------------------|
| 9. grievous.      | 15. inaugurate.  |
| 10. debatable.    | 16. noticeable.  |
| 11. counterfeit.  | 17. deceive.     |
| 12. brilliant.    | 18. disappoint.  |
| 13. contemptible. | 19. discrepancy. |
| 14. discordant.   | 20. absorption.  |

*General duties.*—1. Supply either *is* or *are* in the following, giving briefly your reasons: (a) Each one of the children — frightened. (b) Neither John nor Henry — here. (c) Ellen and her brother — coming. (d) Either this man, or his employees — wrong. (e) This kind of chicken — my favorite.

2. Fill blanks with a word chosen from "Group A" or "Group B," giving briefly reasons for your choice: Group A—I, he, who. Group B—me, whom. (a) I know — I shall try to please. (b) I think the same as —. (c) This is the man, I think, — went first.

3. Arrange the following in strictly alphabetical order, by surnames: Anthony McKenzie, Chester O'Neil, Winfield Henderson, Rouell Ward, Esward Bartholamew, Henry Lampey, Fred Wachstetter, Wm. Barnard, Roswald Odiorne, Fletcher McCauley, Phillip Warren, Walter Carson, Harrison Hensen, James Bernard.

4. Show how you would address envelopes for the following: Geo. H. Miller, Judge Superior Court, County Bldg., Cleveland, Ohio; Rev. H. B. Morgan, Rennick, Mo., Chaplain of Senate; Hon. David M. Garson, Member Congress from Enid, Okla.; Food Commissioner, James B. Morse, 321 North Denver Street, Kansas City, Mo.; Supt. of Schools, C. J. Leonard, Lawrenceville, Ill.

5. Name two time saving office appliances used in connection with the typewriter.

*Letter writing and penmanship.*—James L. Lee, whose address is 1421 Collinsville Ave., Cairo, Ill., writes to the State Civil Service Commission at Springfield, Ill., asking for an application blank and information regarding the position of Certified Public Accountant. The examination for this position is conducted by the secretary of the University of Illinois, located at Urbana, Ill., and Mr. Lee should be referred to him. Write with pen and ink a letter to Mr. Lee, answering his letter to the commission.

#### DEPARTMENT STENOGRAPHER, RANK III.

*Scope and weights.*—Training, 1; experience, 2; stenography and typewriting, 4; rough draft, plain copy and letter writing, 2; duties, 1.

*Stenography and typewriting.*—(Dictated at 115 words a minute.)  
*Supt. W. C. Graves, Pontiac, Ill.*

DEAR SIR: Your letter of February 20 requests authority to make a temporary appointment to fill the vacancy existing in the position of carpenter. The commission provides regular forms for this use, and I have no authority to take action except when requests are made out in the regular manner. These forms are probably in the hands of your chief clerk. For your information, I am enclosing copies of the order and requests for temporary employment forms. These permits are good only for a period of 30 days. In the present case, please fill out the blank as requested in my letter of December 30. As I explained at that time, the list for carpenter contains no one living in the district assigned to your institution, and it will therefore be necessary for me to issue a temporary permit, giving you authority to appoint some one until he can take an examination.

Very truly,

*Mr. Henry C. Abels, Canton, Ill.*

DEAR SIR: I am returning herewith the copies of stories recently submitted for consideration. None of these seems fitted to our use, the chief difficulty being that either the material is a repetition of information recently given in government bulletins or else it seems to lack in general interest.

You ask, I believe, for an outline of our needs in the near future. There are two that I might mention. We would like to have a story of some

farmer and what he has accomplished by the use of a steam plow on a corn belt farm. We would want a personal story giving the details of his experience with a steam plow. Possibly some man in your vicinity has one of these machines and his experience would be worth writing up. We want pictures and descriptions of things which are so new that there is not one chance in a hundred that any considerable number of our readers have ever seen them or anything like them. You will readily see that this at once bars out all subjects which are not entirely new and original.

Very truly,

*Mr. H. P. Brighton, Vice-President, Chicago & Eastern Illinois Ry. Co., Danville, Ill.*

DEAR SIR: I have your letter of February 18 relative to the case of your associate transportation lines.

This hearing on the question of the service of the Illinois Central and Chicago and Alton Railroad Companies was had on the action of the commission after many requests made by residents of the west side. The hearing was limited to the question of whether additional flagmen should be kept at the cross streets on Eleventh Avenue. It appeared at the hearing that all parties agreed that the situation was unsafe, the statements of our inspectors and of the railroads' witnesses tending to show the principal danger to be on the tracks between streets and not on the cross streets themselves. The train movement consists of a varied amount of freight switching done by one engine only. The Public Utilities Commission several years ago recommended that flagmen be stationed at certain crossings.

Very truly,

*Hon. Homer Tice, Chairman Good Roads Committee, Springfield, Ill.*

DEAR SIR: The road question is one in which the interests of the farmer, the railroad and, in fact, the whole people are united; and there should be a union of all forces to bring about an early improvement of present conditions. My hope is that the company that has just been formed represents the great national awakening and practical movement we have so long awaited. The road engineer has given his approval to the new association. When I talked with him about the movement, he indorsed it as a welcome aid to the work already being done by the Government. "Good roads," he said, "will be the big factor in doing away with the isolation of country life and in relieving the congestion of the cities. Moreover, they will attract high class immigrants to the country."

Very truly,

*Plain copy, rough draft letter writing, and duties.*—Same as for Department Stenographer, Rank II.

#### COURT STENOGRAPHER.

*Scope and weights.*—Training, 1; experience, 1; copying from plain copy, 1; dictation and transcription of editorial matter, 2; dictation and transcription of testimony, 3; rough draft, 1; duties, 1.

*Plain copy:*

65. Hearings—Orders—Record—Copies of Official Documents and Orders.

At the time fixed for any hearing upon a complaint, the complainant and the person or corporation complained of, and such persons or corporations as the commission may allow to intervene, shall be entitled to be heard and to introduce evidence. The commission shall issue process to enforce the attendance of all necessary witnesses. At the conclusion of such hearing the commission shall make and render findings concerning the subject-matter and facts inquired into and enter its order based thereon. A copy of such order, certified under the seal of the commission, shall be served upon the person or corporation complained of, or his or its attorney, which order shall, of its own force, take effect and become operative 20 days after the service thereof, except as otherwise provided, and shall continue in force either for a period which may be designated therein or until changed or abrogated by the commission. Where an order cannot, in the judgment of the commission, be complied with within 20 days, the commission may prescribe such additional time as in its judgment is reasonably necessary to comply with the order, and may, on application and for good



cause shown, extend the time for compliance fixed in its order. A full and complete record shall be preserved of all proceedings had before the commission, or any member thereof, on any formal hearing had, and all testimony shall be taken down by a stenographer appointed by the commission, and the parties shall be entitled to be heard in person or by attorney.

In case of an appeal from any order or decision of the commission, under the terms of sections 68 and 69 of this Act, a transcript of such testimony, together with all exhibits or copies thereof introduced and all information secured by the commission on its own initiative and considered by it in rendering its order or decision, and of the pleadings, record and proceedings in the case, shall constitute the record of the commission: *Provided*, that on appeal from an order or decision of the commission, the person or corporation taking the appeal and the commission may stipulate that a certain question or certain questions alone and a specified portion only of the evidence shall be certified to the court for its judgment, whereupon such stipulation and the question or questions and the evidence therein specified shall constitute the record on appeal.

*Dictation* (at 120 words a minute):

A jury having been impanelled to ascertain and report the just compensation to the owner of the property proposed to be taken, the specifications for the proposed levee around the city of Mound City were offered in evidence.

The specifications for the levee work provided, among other things, as follows: (Beginning of quotation) "It is understood that the right-of-way for the levee has been secured; that the city of Mound City has obtained for the benefit of the contractors, options on lands from which to take earth for the levees, and that the cost to the contractors for such earth will not exceed \$50 per acre. A recommendation for proper waiver of time limit of the contract may be made in the discretion of the party of the first part subject to the approval of the chief of engineers." (End of quotation.)

At the conclusion of the evidence and before retirement of the jury, the appellants moved the court to dismiss the petition for the reason that the purpose of the proceeding was shown to be not for the purpose of acquiring the land in question by the petitioner for the public use mentioned in the petition, but for the purpose of resale to the contractor who had the contract for making the levee improvement. This motion was based upon the provisions of the specifications of the work which has just been quoted. These specifications were introduced in evidence at the trial to show the character of the work to be done. They did not show or purport to show the nature of the agreement by which the city was procuring the work to be done. The paragraph quoted indicated that the city was to furnish the earth for the construction of the levee. The statute authorizes it to condemn land for this purpose. The fact that the levee was to be constructed by contract did not prevent the city from taking land for the purpose of securing earth which the city was bound to furnish for the work. If the city by contract procured the work to be done by some other agency than its own employees, it did not thereby lose its power to condemn land to procure the materials necessary for the work. This motion was properly denied.

After the jury had retired and while they were deliberating upon their verdict, the judge, at their request and in the absence of parties to the suit, went into the jury room and made oral answers to several questions asked him by the jury in regard to the appellant's rights. The appellant moved for a new trial, and this action of the court was assigned as one reason. It is an error, for which judgment will be reversed, for a trial judge to hold any communication with the jury in regard to the instructions in the case except in open court. It is immaterial whether the instructions given were right or wrong. The policy of the law requires that all the proceedings of court shall be open and notorious and in the presence of the party; so that if he is not satisfied with it, he may take exceptions to it in a manner pointed out by law, and not be put to extraneous proof to show that an error has been committed in a secret proceeding and in fact out of court.



The judgment is reversed and the cause remanded to the County Court of Pulaski County.

*Dictation* (at 140 words a minute):

Hearing of charges preferred by the Secretary of the State Civil Service Commission against Bert A. Raymond, Superintendent, Insurance Department, Chicago, held in room 502 Commercial National Bank Building, August 7, 1913, 10 a. m. Present: J. H. Burdett, W. B. Moulton, Commissioners; R. S. Brown, Stenographer of the Free Employment Office, Chicago, as witness; Mr. Lamb representing Bert A. Raymond.

R. S. Brown, Stenographer, Free Employment Office, examined by Mr. Burdett.

Q. What is your business?—A. Stenographer.

Q. In what office?—A. Free Employment Office.

Q. Do you know this gentleman?—A. Yes, sir.

Q. Who is he?—A. Mr. Raymond.

Q. What is his business?—A. Superintendent.

Q. In the Insurance Office?—A. Yes, sir.

Q. This is a hearing, Mr. Brown, of charges preferred against Bert A. Raymond by the Secretary of the State Civil Service Commission. The charges are, (1) that he neglects his work as superintendent in that he fails to devote a sufficient and proper amount of time to the performance thereof; (2) that he engages in other business, to wit, real estate business. Will you state anything you know about these charges?—A. I only know I have been around his office a few mornings.

Q. Three mornings?—A. Four mornings, and I did not see him in. I stayed there for three-fourths of an hour one morning, one hour on another morning, and the other two mornings I stayed about half an hour and he was never in.

Q. Now why did you go there?—A. I was sent there.

Q. By whom?—A. One or two mornings I went there on business in order to see about the records, when they expect to get the reports and a couple of mornings I was sent there to see if Mr. Raymond was there.

Q. By whom?—A. Mr. Grant.

Q. Do you know Mr. Grant's purpose in sending you there? Did he tell you his reasons for sending you there?—A. He wanted to see how the office was. He wanted me to go there and see if Mr. Raymond was in there.

Q. Did he tell you?—A. He did one morning, the other morning he told me to see if he was in there, that he wanted to find out what time he came to work.

Q. Did he tell you he had received any complaints of Mr. Raymond not being in the office?—A. Yes, sir.

Q. What did he tell you?—A. I heard Mr. Raymond was in the real estate business. I went to find out the straight of it and also the time he comes to work, the business hours put in at his office.

Q. Did he tell you he understood Mr. Raymond had put in the State's time for his private business?—A. Yes, sir. He had.

Q. Will you describe the visits you paid to Mr. Raymond's office giving the dates where you can?—A. Well, it was on the sixteenth, seventeenth, eighteenth and nineteenth of June as nearly as I can remember those are the dates.

Q. You are sure of that?—A. Pretty positive.

Q. You are sure that you called at that place on or about those days?—A. Yes, sir.

Q. And those were days the office was open for business?—A. Yes, sir.

Q. What did you find out on those visits?—A. I stepped into the office—

Q. What day was this?—A. On the sixteenth, I stepped in his office, looked in his private office to see if I could see him. I could not see him. I stood around there talking to a fellow right next to his desk talking about the report and Mr. Ball was also there, the chief clerk, and got to talking about the report and asked him when he thought he would have it ready. Mr. Harris said he would have the report ready soon for me, and I said I would like to know when he would have it ready. The other mornings I stepped in there and just stood around waiting for Mr. Raymond to come down.

Q. What time was it that you went there on the sixteenth, the first visit?—A. It was in the morning. June sixteenth.

Q. What time is that office open for business?—A. 8.30 a. m.

Q. How long?—A. I would not swear to it at 8.30. The Insurance Department opens sometimes about 8 or 8.30. I think the superintendent's office opens about 8 o'clock. I know I got down to the office at 8.30 and went into the office to take off my coat and hat and went down to his office to see if he was there.

Q. He has a private office there?—A. Yes, sir.

Q. And you saw all of that office on that visit?—A. Yes, sir.

Q. He was not there?—A. No, sir.

Q. You could see he was not there or in any other office? If he had been there you would have seen him?—A. He was not.

Hearing resumed at 8 o'clock p. m., April 4, 1908, at Chester, Ill.

The witness, Cyrus H. Anderson, called as a witness herein, having been first duly sworn, was examined and testified as follows:

Q. Doctor, what is your name?—A. Cyrus H. Anderson.

Q. And what is your present occupation?—A. Physician. Medical superintendent is the title of the position I hold at the prison.

Q. Medical superintendent of what?—A. Of the Illinois Asylum for the Criminal Insane.

Q. At Chester, Illinois?—A. Yes, sir.

Q. How long have you occupied that position, Doctor?—A. Since the 20th of September last.

Q. 1907?—A. Yes, sir.

Q. Do you reside at that institution?—A. I do.

Q. You are a regular practicing physician, are you?—A. I am, yes, sir.

Q. What previous experience had you had in treating the insane before accepting this position?—A. The regular experience of a physician who has had 10 years experience.

Q. Did you make any special study or preparation for such work?—A. Yes, sir. I made special study with that end in view, but I could not say any other practice or experience than an extensive practice would give one.

Q. The occasional experience in meeting that kind of patients?—A. Yes, sir.

Q. Did you make any study of institutional matters of that kind?—A. I did. I had the question of institutional work in mind for some time, and had been preparing and studying for it.

Q. Now, what class of people are committed to your institution, Doctor?—A. The insane class.

Q. How do they get there?—A. We have three sources, you might say. Those who become insane, who are incarcerated in either one of the two prisons, are transferred to my institution, provided they are not females. Secondly, I get a class of cases known as the mittimus cases that come directly from the courts. And, thirdly, I get the class of cases that are called the transfer cases, who are transferred from other institutions to this.

Q. Other insane institutions?—A. Other insane institutions. I don't think I have many of that class now.

Q. Well, are they all criminals?—A. Well, this case that I refer to as having been transferred from Kankakee, who is there in the hospital, I would not say that he is a criminal, yet he became dangerous. He frequently assaulted the attendants in Kankakee, and became dangerous to the other inmates of the institution, and on the recommendation of the State Board of Charities, he was transferred to my institution for safe keeping on account of homicidal tendencies. That is what I mean by a transfer case.

Q. For the reason that you are more particularly equipped to handle that class of people?—A. That is the idea, I have them to deal with more.

Q. How many inmates have you there?—A. Two hundred and ten.

Q. Have you had any serious injuries since you have been there?—A. Well, we had one suicide case.

Q. A patient tried to kill himself?—A. Yes, sir.



Q. How did he do that?—A. Hung himself.

Q. Where—in his cell?—A. Yes, sir.

Q. Did you have a coroner's inquest?—A. I did.

Q. And that was the finding of the jury?—A. Yes, sir.

Q. Is that the only coroner's inquest since you have been there?—A. No, sir; there was one other.

Q. What was the cause of the other?—A. A man died in an epileptic seizure.

Q. And you called in a coroner's inquest—A. Yes, sir.

Q. And had the matter investigated?—A. Yes, sir.

Q. And that was the finding of the jury?—A. Yes, sir.

Q. Have you had any complaints of your officers injuring any of the patients since you have been there?—A. No, sir; I cannot say that I have had complaints. Of course, I have patients there who have delusions of persecution, who allege all kinds of cruelties against those around them, who do not in fact attack them, or ever manifest any violence toward them or otherwise ill treat them. In fact, the matter of insane delusion is one of the most frequent forms of symptoms of the insane.

Q. Well, have the officers been called upon or been obliged or have they, as a matter of fact, struck or injured any of your patients since you have been there, that you know of?—A. Occasionally an officer is compelled to strike a patient.

Q. Do the officers carry any weapons?—A. Not at all.

Q. Do they carry a blackjack or sapper?—A. They do not.

Q. They do not carry anything of that kind in the institution?—A. Nothing.

*Duties.*—1. Give a definition of the following legal terms: Prima facie, subpœna, bona fide, docket, deposition, appellee, habeas corpus, alias, arraign, indicted. 2. What preliminary information should be shown on the first page of a court stenographer's transcript? 3. Make up a form to follow in writing the heading and close of an affidavit, using any town and county you wish. 4. How would you be sure of the spelling of proper names mentioned in testimony given and the names of witnesses called? 5. Write from 50 to 100 words, giving your reasons for your favorite method of taking notes, whether by pencil, pen, or machine.



## CHAPTER V.

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### INSPECTION POSITIONS (GRAIN AND FOOD).

The largest number of positions of this nature are in the Grain Inspection Office in Chicago. Food inspectors have important work to do.

Grain inspection is expert work requiring such a degree of knowledge as only long familiarity with grain and practice in accurately judging it will give. Exact knowledge of the inspection law is necessary.

*Opportunities for promotion.*—Excellent opportunity for promotion is offered in the grain inspection service to persons who may enter as grain helper, \$75 to \$85 a month, and rise to supervising grain inspector. An idea of the chances of promotion may be obtained from the classification, these positions being included in Promotion Class I (Grain Inspection Service). Positions of food inspector are included in Promotion Class M (Food Inspection Service).

Training and experience usually counts for 3 points out of 10 in examinations for inspection positions. The other questions usually relate strictly to the duties of the position sought and bring out the applicant's knowledge of the law under which the department operates. Frequently a part of the test is oral and this may include a practical demonstration of the candidate's ability, as, for instance, the grading of samples of grain.

### SAMPLE QUESTIONS.

Typical questions follow, not including training and experience:

#### GRAIN HELPER.

*Scope and weights.*—Training and experience, 3; knowledge of grain trade, 4; clerical work, 3. Good physical condition required.

*Knowledge of grain trade.*—1. What is the purpose of State inspection of grain? 2. What different kinds of grain are inspected in the markets of Illinois? 3. Which grain does the United States export the most? 4. Name the two positions next above that of grain helper in the Grain Inspection Department. 5. Name five railroads which bring a good deal of grain into Chicago. 6. Give your opinion as to what information should be shown on a label attached to a sack containing a sample of grain. 7. What quantity of grain do you believe would make a suitable sample? 8. Why is it necessary to collect samples of grain very early in the morning? 9. How would you locate in the quickest way a car of grain in a local freight yard or on a local team track, if furnished with initial, car number, and consignee's name?

*Clerical work.*—1. A bushel contains about 2,150 cubic inches. How many bushels of wheat will a bin 13 feet by 20 feet by 5 feet contain? 2. Which of the following is heaviest and which is lightest: (a) a bushel of wheat; (b) a bushel of oats; (c) a bushel of shelled corn. 3. Give the abbreviation for the following commercial terms: (a) bushel, (b) package, (c) collect on delivery, (d) peck, (e) bundle, (f) free on board, (g) hun-

dredweight, (h) ounce, (i) merchandise, (j) barrel. 4. Write about 150 words on the importance of the inspection of grain. 5. Make an exact copy of the following:

WHEAT.

Month.	Northern.			Spring wheat.		
	1	2	3	1	2	3
January, 1912.....	45,051	35,939	1,465	3,916	1,042	5,000
February, 1912 .....	27,046	32,183	1,187	.....	19,503	9,812
March, 1912 .....	64,632	15,100	10,415	.....	11,850	8,112
April, 1912.....	76,479	10,000	.....	.....	5,000	2,250
May, 1912.....	40,826	216,296	2,048	.....	.....	1,849
June, 1912.....	80,227	22,000	.....	3,274	3,000	.....
Total.....	334,261	331,518	15,115	7,190	40,395	27,023

GRAIN SAMPLER—CLERK.

*Scope and weights.*—Training and experience, 3; law and duties, 2; practical tests, 3; clerical work involved in grain inspection, 2. Candidates must pass a physical examination and make a grade of 70 or more on clerical duties.

*Law and duties.*—1. What is a sample of grain and why is it taken by the State? 2. Describe how a sample is taken and what is done with it, mentioning briefly the part played by the various State employees that handle it and keep the records concerning it. 3. Describe in detail the process necessary to take a correct sample or samples fairly representative of a carload of grain. 4. Give the legal weights in Illinois, of (a) barley, (b) wheat, (c) corn, (d) oats, (e) rye, (f) clover, (g) timothy. 5. What is the law regarding the mixing of grains of various grades by public warehousemen? 6. If a sampler finds a car damaged and badly leaking, what is his duty? 7. (a) What circumstances should justify a sampler in reporting a car “subject to approval?” (b) What are the duties of the sampler in such case? 8. Explain a sampler’s duties with reference to open car doors during stormy or inclement weather. 9. What is the difference between white oats, Texas oats, and mixed oats? 10. Suppose you find wet corn in a car. (a) What causes may have produced this condition? (b) How would you determine the cause? 11. If you found a car loaded with different kinds of grain, what would you do?

*Practical tests.*—Candidates are required to grade a number of samples of the more ordinary grains handled by the Grain Inspection Department.

*Clerical work.*—See the questions on Knowledge of Clerical Work under “Grain Helper.” In this case, however, the questions will be somewhat more difficult and will be graded more strictly. The penmanship of the candidate will also be taken into account.

DEPUTY GRAIN INSPECTOR.

*Scope and weights.*—Training and experience, 3; knowledge of law and rules of Grain Inspection Department, written, 3½; oral and practical, 3½.

*Knowledge of Law and Rules.*—1 and 2. The Department of Agriculture on August 2, 1913, issued a tentative standard graduation of corn, worked out by the bureau of plant industry, which had been conducting an extensive investigation of grain grading throughout the country under the direction of Congress.



## PROPOSED GRADES GIVEN.

The grades proposed follow:

Grade classification— white, yellow and mixed corn.	Maximum percentage of moisture.	Maximum percentage of damaged corn exclusive of "heat damaged" or "mahogany" corn.	Maximum percentage of foreign material including dirt, cob, finely broken corn, other grains, etc.	Maximum percentage of badly broken or "cracked" corn, not including finely broken.
No. 1.....	14.0	2	1	2
No. 2.....	15.5	4	1	3
No. 3.....	17.5	6	2	4
No. 4.....	19.5	8	2	4
No. 5.....	21.5	10	3	5
No. 6.....	23.0	15	5	7

Sample.—See general rule No. 6 for sample grade.

The following general rules for grading corn are proposed: 1. The corn in grades No. 1 to No. 5 must be sweet. 2. White corn, all grades, shall be at least 98 per cent white. 3. Yellow corn, all grades, shall be at least 95 per cent yellow. 4. Mixed corn, all grades, shall include corn of various colors not coming within the limits for color as provided for under white or yellow corn. 5. In addition to the limits indicated, No. 6 corn may be musty, sour, and may also include corn of inferior quality, such as immature and badly blistered. 6. All corn that does not meet the requirements of either or the six numerical grades, by reason of an excessive percentage of moisture, damaged kernels, foreign matter, or badly broken corn, or corn that is hot, heat damaged, fire burnt, infested with live weevil or otherwise of distinctly low quality, shall be classed as sample grade. 7. In No. 6 and sample grade, reasons for so grading shall be stated on the inspector's ticket or certificate. 8. Finely broken corn shall include all broken particles of corn that will pass through an 8 by 8 mesh wire sieve, the diameter of the wire to be twenty-five thousandths of an inch. 9. Badly broken or "cracked" corn shall include all broken pieces of kernels that will pass through a 4 by 4 mesh wire sieve, the diameter of the wire to be thirty-six thousandths of an inch, except that the finely broken corn, as provided for under Rule 8, shall not be considered as badly broken or "cracked" corn. 10. It is understood that the damaged corn, the foreign material, including cob, dirt, finely broken corn, other grains, etc., and the badly broken or "cracked" corn, as provided for under the various grades, shall be such as occur naturally in corn when handled under good commercial conditions. 11. Moisture percentages as provided for in these grade specifications shall conform to results obtained by the standard method and tester as described in Circular 72, Bureau of Plant Industry, United States Department of Agriculture—Take each item given above and compare it to present requirements of State Grain Inspection Department.

3. (a) Name the different kinds of wheat (not grades) mentioned in the Rules of the State Grain Inspection Department and tell fully why each kind is thus named. (b) Grade any one of the above classes of wheat according to the Rules. 4. (a) What is "hardness" in wheat? Name five kinds of wheat in the order of their hardness. (b) To what may light weight in wheat be due? (c) Under what conditions would a "Sample Grade" of wheat exist? 5. (a) How would you know when grain has been exposed to weather? (b) To overheating in the bin? (c) What are the specific provisions in Rules relative to new crops? 6. (a) State the characteristics of a good oat grain. (b) Can the comparative merits of oats be determined by weighing them? State in detail reasons for answer. (c) Name the different classes of oats (not grades) mentioned in the Rules and define each kind. 7. (a) Grade one class of oats, giving requirements of grade. (b) Name in their relative importance the principal factors determining the grades of rye. 8. (a) State the characteristics of barley



fit to be used for malting purposes. (b) What are the causes of the various colors found in barley? (c) Name the defects commonly found in barley, giving causes of each. 9. (a) What are the objects and duties of the Registration Department? (b) What is the law regarding the mixing of grains of various grades by public warehousemen? (c) Give the legal weights in Illinois of barley, wheat, corn, oats, rye, clover, and timothy. 10. What do you mean by the inspection and grading of grains and what is its purpose?

The practical test included actual grading of samples of grain such as might come to the department.

### FOOD INSPECTOR.

*Scope and weights.*—Training and experience, 3; technical questions on duties, 4 2/3; oral examination, 2 1/3.

*Technical.*—1. (a) What is "ketchup?" (b) Name the various ingredients entering into, and the mode of manufacture of tomato ketchup. 2. (a) What is glucose? (b) How is it obtained? (c) Of what use in the manufacture of food products? (d) In what forms and under what names is it commonly sold? 3. What would receive your particular attention in inspecting a (a) grocery store? (b) bakery? (c) dairy? (d) meat market? (e) restaurant. 4. (a) What is pasteurized milk? (b) What is sterilized milk? (c) What is modified milk? (d) Has the bacteria count in milk any significance, and if so, what? (e) What diseases are spread through milk and what means should be taken by the inspector to prevent them? 5. Give the several legal definitions of adulteration as applied to foods, and give an example of each. 6. What is misbranding within the meaning of the food law? Give three examples. 7. (a) Give in detail the method to follow in making the sanitary inspection of a canning factory. (b) Give the most important points to be observed. 8. (a) Name the several kinds of vinegar on the market. (b) Describe the method of manufacture of distilled vinegar. (c) What is the minimum legal acid strength of vinegar in Illinois? (d) What is the "acid" of vinegar? 9. (a) Under what conditions is a person not allowed to work in a building used for the production or distribution of food? (b) If on inspection under a State law, an employee is found to be suffering from consumption, what steps should be taken by the inspector? 10. (a) Describe the source from which the following sugars are obtained: cane, beet, maple, grape, climax, and brewers. (b) What is the chemical difference between cane and maple sugar? (c) What substitute is often used for sugar, and in what products?

## CHAPTER VI.

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### MEDICAL AND NURSING POSITIONS.

The examinations for medical interne and assistant physician are the means of entering a service which holds out a good chance for advancement. By promotional examinations, open only to those in the service, the way is opened to the positions of physician and assistant superintendent, the latter officer being the chief of all the medical and nursing staff at a hospital for the insane. See Classification, Promotional Class C (Institution Physician Service).

Graduate nurses are in line for promotion to supervising nurse and chief nurse in hospitals for the insane. Usually the examinations for male supervising nurse are open to the general public as original entrance tests. See Classification, Promotional Class D (Institution Nursing Service). Graduate nurses are appointed from among those attendants that take the free training school course in the State hospitals and pass the final examinations. See Chapter VII.

### SAMPLE QUESTIONS.

The portion of the medical interne examination on training and experience is given only a weight of 2 out of 10, as it is not expected that applicants will have had much or any experience. For other positions of this class, this part of the examination is given higher weight, usually 3 and sometimes 4. The division of the remaining portions is indicated in the following typical sets of questions (training and experience not included):

#### MEDICAL INTERNE.

*Scope and weights.*—Training and experience, 2; medicine, 2; surgery, 2; nervous and mental, 2; pathology, 2.

*Medicine.*—1. Give the cardinal points in the diagnosis of typhoid fever. 2. Differential diagnosis between lobar pneumonia and pleurisy with effusion. 3. Pathology and diagnosis of tuberculosis of the kidney.

*Surgery.*—1. Diagnosis and operative treatment of gall-stones. 2. Treatment of compound fracture of the lower third of both bones of the leg.

*Nervous and mental.*—1. Differentiate the clinical manifestations of tumor of the brain from other conditions which resemble them. 2. Etiology and symptoms of acute anterior poliomyelitis.

*Pathology.*—1. Describe the diphtheria bacillus. 2. Gross and microscopic pathologic anatomy of acute scarlatinal nephritis.

#### ASSISTANT PHYSICIAN.

*Scope and weights.*—Training and experience, 4; medicine, 2; surgery, 1; nervous and mental diseases, 2; pathology, 1.

*Medicine.*—1. Symptoms and diagnosis of small-pox. 2. Diagnosis and treatment of peptic ulcer of the stomach.

*Surgery.*—1. Symptoms and treatment of intestinal obstruction. 2. Diagnosis and treatment of extrauterine pregnancy.

*Nervous and mental.*—1. Symptoms of alcoholic multiple neuritis. 2. Discuss the manifestations of cerebral arteriosclerosis. 3. Give the diagnostic points of general paresis in the order of their importance.



*Pathology.*—1. Findings of the cerebrospinal fluid in the various forms of meningitis.

#### GRADUATE NURSE.

*Scope and weights.*—Training and experience, 3; technical knowledge, 7.

*Technical knowledge.*—1. (a) Mention three common causes for bed-sores. (b) Outline nursing measures to prevent bed-sores. 2. (a) How would you prepare and administer a cleansing enema? (b) Give formulae for two nutritive enematae. (c) Give formula for a stimulating enema. 3. (a) Outline in detail the preparation of articles necessary for catheterization. (b) Outline the preparation of the nurse's hands for catheterization. (c) State in detail your method of collecting a 24-hour specimen of urine for laboratory examination. 4. (a) Mention all articles needed and outline their preparation for a gastric lavage (stomach-wash). (b) Write out two formulae for gastric gavage (tube-feeding). 5. (a) What discharges must be disinfected in the following diseases: typhoid fever; scarlet fever; tuberculosis; small-pox; diphtheria? (b) Outline the nursing care in typhoid fever. 6. (a) Name three solutions which are disinfectant in full strength and mildly antiseptic in weak solution. 7. (a) Give reasons why occupation and entertainment are useful aids to recovery in mental disorders. 8. (a) What precautions would you especially observe in nursing a case of purulent conjunctivitis? (b) What five points of importance must be noted when taking pulse? 9. (a) Classify the bones according to shape and give example of each. (b) What is the periosteum and what is its function? 10. (a) Name the divisions of the respiratory tract. (b) Name the muscles concerned in respiration. 11. (a) Name the divisions of the digestive tract. (b) What two special purposes does bile serve? 12. (a) Name the two distinct varieties of muscles and give examples of each. (b) Name and locate a serous membrane. (c) What are mucous membranes and where are they found? (d) Name the three most important organs concerned in elimination. 13. Define bacteria. 14. Name five diseases produced by bacteria, giving name of bacteria producing same. 15. Describe in full your method of fumigating a room after a contagious disease. 16. (a) Name the food principles and give examples of each. (b) Why is milk considered a perfect food? 17. (a) How would you prepare an egg-nog? (b) How would you peptonize milk? 18. Give the menu for the first three days of convalescence of a typhoid patient. 19. (a) How would you prepare 1 pt. of Normal Salt Solution, Formalin 1:1000, 1 qt. Bichloride of Mercury 1:1000, 1 qt. Carbolic Acid 5%. 20. (a) Name ways by which medicine may be introduced into the system. (b) Describe in detail your method of giving a hypodermic injection. 21. (a) Give symptoms and treatment of opium poisoning. (b) Give doses of following: (1) Epsom Salts; (2) Fowler's Solution; (3) Hyoscine; (4) Strychnine Sulphate; (5) Asperin; (6) Salol. 22. Give two the symptoms and treatment of opium poisoning. 23. (a) What is meant by methods of preparing the abdomen for laparotomy? 24. (a) How would you sterilize sharp surgical instruments? (b) Dull surgical instruments? (c) Linen fabrics? (d) Rubber tubing? (e) Gutta-percha rubber tissue? (f) Clinical thermometer? (g) Silk worm-gut? (h) Linen suture? 25. (a) Mention various kinds of wounds. (b) What effect has infection on a wound? Describe both local and constitutional symptoms that wound infection may produce.

#### MALE SUPERVISING NURSE.

*Scope and weights.*—Training and experience, 3; practical nursing, 4; administration, 3.

*Practical nursing.*—1. (a) Define ventilation. How is good ventilation procured? (b) Give the temperature of a ward during the day; the night. 2. (a) What is the difference between subjective and objective symptoms? (b) Name four objective symptoms. 3. Give the cause, prevention, and treatment of bed sores. 4. (a) Describe in detail your method of giving a Brand bath. (b) State the purposes for which it is given. (c) State precautions in giving it. 5. (a) Name four rules to be observed in the nursing care of



nervous and insane patients. (b) Give points to be observed in the nursing care of a case of epilepsy. 6. (a) State the purpose for which enemata are given. (b) Tell how to prepare and administer a nutritive enema. 7. Give the suppression of urine? Retention? Incontinence? (b) What is the specific gravity of normal urine? 9. (a) Outline in detail the preparation of articles necessary for catheterization. (b) Outline the preparation of the nurse's hands. 10. What serious results may follow careless catheterization? 11. How would you prepare and administer a soap-suds enema? 12. (a) Mention three common causes for bed sores. (b) Outline the nursing measures to prevent bed sores. 13. Give reasons why occupation and entertainment are useful aids to recovering in mental disorders. 14. What do you consider your duty in this matter? 15. (a) What special attention must be given to epileptic patients? (b) How would you care for them during a seizure? 16. What nursing measures may be employed to induce sleep in restless patients?

*Administration.*—1. How can you, as supervising nurse, assist an institution to make the administration one of economy without the sacrifice of efficiency? 2. Outline in a general way the daily routine of ward work on a reception ward. (For acute cases.) 3. Write briefly on the care of feeble-demented, untidy patients. 4. What do you consider the duties of a male supervising nurse?

## CHAPTER VII.

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### MINOR HOSPITAL POSITIONS.

The State of Illinois needs honorable young men and women to work in its State institutions. It is willing to pay them good wages, furnish them with excellent quarters, good board, recreation, and an education in which the possibilities are almost unlimited. The entering positions are those of attendant, domestic and laborer. The examinations for attendants can easily be passed by anyone with a common school education and a sound body. The examinations for domestics and laborers require only good physical condition and satisfactory previous record. Further details as to requirements may be found on page 7. Examinations are conducted at the charitable institutions listed on page 7, at 9 a. m. on each Saturday, and at various other points over the State by local physicians authorized by the commission to examine applicants.

In most institutions there is a steady demand for both men and women as attendants and as the opportunity for increase in salary and for study under the instruction of experienced nurses and physicians is offered free of charge, the positions are attractive. At most of the institutions the State maintains quarters for attendants and nurses far better than would be found in the average home. It is planned to erect at each hospital where they do not now exist, buildings for the special accommodation of the employees where each will have his private room, nicely furnished, lighted and heated. In Chapter I, pages 7 to 11, full details are given as to dates and places of examination.

In each State hospital a training school for nurses is conducted which attendants are encouraged to attend and after graduating in a two-years' course they become graduate nurses. They may rise in turn to positions as supervising nurse and chief nurse. See Classification, Promotion Class D. (Institution Nursing Service).

### SAMPLE QUESTIONS.

#### ATTENDANT.

*Scope and weights.*—Common school requirements, 3; physical, 5; qualifications and duties, 2.

*Common school requirements.*—1. A barrel of flour weighs 196 pounds, what is the weight of 639 barrels? 2. From what countries do we import most of the coffee consumed in the United States? 3. Name five railroads which own a right-of-way within the State of Illinois. 4. Write between 50 and 100 words telling about the war in Europe. 5. Copy the following exactly. (You will be marked on penmanship and accuracy): Any person who shall maltreat (abuse or strike) any insane person shall be guilty of a misdemeanor, and, upon conviction thereof, shall be fined not exceeding one thousand dollars, or imprisoned not exceeding one year, or both, at the discretion of the court in which such conviction is had.



## CHAPTER VIII.

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### INSURANCE DEPARTMENT POSITIONS.

Work in the Insurance Department offers good chance for promotion as the positions are numerous and the higher positions pay good salaries. Persons who start in as insurance clerks are directly in line for promotion to such positions as actuary or chief insurance clerk, paying salaries up to \$350 a month. See Classification, Promotion Class J (Insurance Service.) In the lower grade positions in this department the examinations deal more with the applicant's general knowledge of office methods and with his ability to handle the ordinary processes of arithmetic than with any detailed knowledge of the insurance law or its administration. In the higher positions it will be expected that applicants have thorough knowledge of the law under which the department operates. Actuaries must be thoroughly skilled in the actuarial science.

### SAMPLE QUESTIONS.

Typical questions follow (not including training and experience):

#### INSURANCE CLERK.

*Scope and weights.*—Training and experience, 3; penmanship and arithmetic, 5; clerical duties, 2.

*Penmanship and arithmetic.*—1. Copy the following: "Since the date of the last report, examinations have been made of the following named fire insurance companies, either in the matter of incorporation, upon application for admission, or to ascertain their financial condition:

Central National Fire Insurance Co., Chicago, Ill.

German Fire Insurance Co., Peoria, Ill.

Insurance Co. State of Illinois, Rockford, Ill.

Miller's Mutual Fire Insurance Ass'n, Alton, Ill.

"No other form of insurance activity has in recent years been the subject of so frequent legislative inquiry and attack as fire insurance. Whatever may be the results of these investigations, or the operation of the recently enacted laws, the cause of the agitation is traceable directly to the stock fire insurance companies.

"Immediately following the San Francisco fire, while the attention of the whole country was directed to fire insurance, the fire insurance companies began a nation-wide campaign of publicity and fire insurance education.

"Of necessity, it was their first duty to bring the public to a full understanding of the importance and magnitude of the problems involved, and to do this the elements of the premium charge were analyzed, and for the first time in the history of the business were in a systematic way made public.

"It was shown that American insurers were paying more than \$2.50 per capita annually in premium charges, while the cost of the same indemnity in foreign countries was from one-fourth to one-twentieth of this amount.

"The fire companies through various organized agencies for this purpose, exploited the necessity for better building laws and ordinances, for cleaner streets, alleys and buildings, safer electrical wiring, the general

removal of all known causes of fire, and especially the enactment of more stringent laws providing greater personal responsibility for preventable fire losses.

“This educational campaign has not in all localities met with the result anticipated, but, on the contrary, some of the states have assumed that the reason for the high cost of fire insurance was entirely with the insurance companies, rather than with the insurance buyers.”

2. Copy the following and add horizontally and vertically:

\$49,734 06	\$ 221 20	\$ 15 00	\$ 1,238 35	.....
3,419 68	5,294 53	561 58	23,592 37	.....
21,061 75	356 82	74 80	684 90	.....
671 42	20,755 00	8,413 25	2,654 00	.....
545 95	6,423 89	5,665 50	884 15	.....

3. Multiply 8,281.56 by 5,256 and divide the result by 219.

4. Copy the form shown below. Make the extensions necessary to fill the right hand column and add that column, placing the total at the foot:

Employee No.	Days worked.	Rate per day.	Amount.
1	25	\$2 60	.....
2	21	2 75	.....
3	25	2 75	.....
4	18	1 75	.....
5	24	2 30	.....
6	25	2 00	.....
7	15	1 90	.....
8	19	1 90	.....
9	25	1 75	.....
10	22	1 60	.....
11	18	1 50	.....
12	25	1 50	.....
13	25	1 30	.....
14	9	1 25	.....

Total—

*Clerical duties.*—1. In checking proof, which should be read from, the copy or the proof? Why? 2. (a) Name two kinds of filing systems commonly used. (b) For what sort of work is each particularly adapted? 3. Mention five appliances or machines used to facilitate office work and explain briefly the use of each. 4. Following are figures showing the number and amount of policies terminated in 1912 and 1913 and the cause of termination. Arrange this information in tabular form as for a report:

In 1912:	
By death .....	302,028; amounting to \$160,794,869
By maturity .....	75,760; amounting to 144,349,564
By surrender .....	293,882; amounting to 289,746,611
By lapse .....	2,784,670; amounting to 752,276,013
By transfer .....	4,588; amounting to 87,684,367
In 1913:	
By death .....	314,674; amounting to 171,366,152
By maturity .....	79,774; amounting to 138,538,202
By surrender .....	305,491; amounting to 295,667,928
By lapse .....	2,671,578; amounting to 717,292,796
By transfer .....	1,414; amounting to 70,190,009

5. Mention the fundamental forms of life insurance policies indicating briefly the distinctive features of each. 6. State briefly the essential differences between life insurance organizations on the “legal reserve,” “assessment,” and “fraternal” bases. 7. State your opinion of the desirability of a licensing system for agents of insurance companies. Give your reasons. 8. What filing system of agents’ records would be best suited for Insurance Department purposes?

**CHIEF CLERK, INSURANCE DEPARTMENT.**

*Scope and weights.*—Training and experience, 3; knowledge of insurance laws, 5; department practice, 2.



*Knowledge of insurance laws.*—1. Explain the necessary steps to be taken in order to organize in Illinois. (a) A Legal Reserve Life Insurance Company, (b) An Assessment Life Association, (c) A Fraternal Beneficiary Society, (d) A Stock Fire Insurance Company, (e) A Mutual Fire Insurance Company, (f) A Farmers Mutual Fire Insurance Company, (g) A Stock Casualty Company, (h) A Live Stock Company, (i) A Surety Company. 2. Name the kinds of investments permitted by law to each of the classes of companies mentioned in "1." 3. (a) Name the different kinds of business permitted under the Stock Casualty Act. (b) How much capital is required to do each class of business in Illinois? 4. How much of the declared stock of the following companies must be paid in before the company can commence business? (a) A Legal Reserve Life Insurance Company, (b) A Stock Fire Insurance Company, (c) A Stock Casualty Company, (d) A Live Stock Company, (e) A Surety Company. 5. When is (a) a Fraternal Order insolvent? (b) a Regular Life Insurance Company? (c) an Assessment Life Association? (d) a Stock Fire Insurance Company? 6. Explain the provisions of the Reserve Deposit Law applicable to regular life companies of Illinois. 7. Explain (a) Inter-Insurance, (b) Lloyds Insurance, (c) Surplus Line Fire Insurance. Give the main provisions of law governing each. 8. On what basis are insurance companies taxed, which are transacting business in Illinois?

*Department Practice.*—1. Outline a proper organization for a State Insurance Department. Give the duties of the heads of the various divisions you would use, and indicate their relations to each other. 2. How would you, as chief clerk, determine the comparative efficiency of (a) insurance examiners? (b) Clerks?

## ACTUARY.

This examination was unassembled and consisted of a careful inquiry into the training and experience of each applicant, together with a thorough verification of all answers and statements made by the applicants. Following are the questions used to bring out this information:

*Scope and weights.*—Training and experience, 10.

*Training and experience.*—1. Full name. 2. Postoffice address. 3. Place and date of birth. 4. State briefly the extent of your education, indicating the years so spent and the schools attended. 5. Describe the training you went through to fit you for actuarial work. 6. (a) Name any actuarial societies of which you are a member. (b) If a member, state whether you were admitted by examination or otherwise. Give examination dates. 7. (a) To what extent are you familiar with the laws governing Legal Reserve Life Insurance Companies of Illinois? Name their strong features. In what particulars are they weak? (b) Of the middle West? 8. What experience have you had in insurance accounting and in the preparation of department statements? 9. List the positions you have occupied in actuarial work, giving the following information: (a) Employer. (Give present address, if possible); (b) Position occupied; (c) Approximate dates between which such position was held; (d) Salary received; (e) Nature of work done; (f) Reason for leaving. 10. What employment have you had (not listed above) which would tend to fit you for the position of actuary in the Illinois Insurance Department? 11. Have you ever examined any life insurance companies? If so, for what departments? 12. Name any articles or papers written by you on actuarial subjects. (Give dates of publication approximately, paper in which published, etc.) 13. State any particular studies you have made, or experiences encountered, not mentioned in preceding questions, which would tend to fit you for the position sought.

## CHAPTER IX.

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### TEACHING POSITIONS.

The teaching positions of the State are sufficiently varied to attract persons who have had experience in teaching in almost any of the more ordinary lines. They range from kindergarten teacher through all the grades to principal of the school, and also include industrial, manual training, and fancy work teaching, instruction of the deaf and blind, in the use of musical instruments and in singing. For the lower grade positions training and experience is usually given a weight of 2 out of 10, while for principal the weight is 3. It is seldom that the commission has enough male applicants for these positions to fill vacancies as they occur. Likewise, at some institutions it is difficult to get enough women to handle the work.

For opportunities of promotion see Classification, Promotion Class L (Teaching Service).

### SAMPLE QUESTIONS.

Following are typical questions omitting the training and experience:

#### PRIMARY TEACHER.

*Scope and weights.*—Training, 1; experience, 1; class room management, 3; special method, 3; knowledge of subject matter, 2.

*Class room management.*—1. State what you would do the first day of school to get classes organized and in working shape. 2. What difficulties arise from putting a backward 12-year-old pupil with a first grade class? 3. The pupils in a second grade class range in age from 7 to 13; some of the older ones are feeble-minded, and some are normal but have had little school training. Give your idea as to the extent instruction should be individual. 4. Give a program for the day. (Assume you have pupils of only one grade.) 5. What do you consider ideal conditions as to light, heat, and ventilation in a school room? 6. What are the principal problems of discipline in the first grade? The fourth grade? 7. Give your idea of the relation that should exist between a primary teacher in a State institution school and the principal. 8. To what extent should games and physical exercise be used in a State institution school? Why?

*Special Method.*—1. Explain what you consider the best method of teaching reading to beginners in a State institution school. 2. Explain in detail how you would conduct a drill on the facts of the addition tables. 3. Briefly describe two games and two other physical exercises suitable for use in the lower grades of a State institutional school. 4. What use may be made of Mother Goose rhymes in the lower grades? 5. For what class of pupils in State institutions are each of the following kinds of stories suitable: (a) Fairy stories; (b) Pioneer stories; (c) Myths; (d) Stories of adventure. 6. Tell how you teach pupils to use the dictionary. 7. Explain what use of famous paintings you would make in the second grade. 8. How would you teach pupils to use paragraphs in their own writing?

*Knowledge of subject matter.*—(You will be marked on penmanship from this paper.) 1. Give directions for an exercise in paper folding. (Use the exact words you would employ before a class.) 2. Give a brief account of



Pestalozzi and Froebel. 3. Account for the difference in industries in Illinois and Massachusetts. 4. Account for the settling of southern Illinois by immigrants from the southern states. 5. Sketch Illinois and show the location of five of the largest cities. 6. Name and describe some insect and explain its relation to plants. 7. Name 10 plants whose seeds are extensively used by man, and tell how the seeds are used. 8. Write a composition of 150 to 200 words on one of these subjects: (a) Woman Suffrage (b) Vocational Training; (c) My Opinion of Lynching.

### ADVANCED TEACHER.

*Scope and weights.*—Training, 1; experience, 1; class room management, 2; special method, 2; knowledge of subject matter, 4.

*Class room management.*—1. What do you consider the most difficult problem of discipline in grades five to eight in a State institution school? 2. Tell in detail how you would deal with one of the problems given in your answer to question 1. 3. What are the requirements of a good drill? 4. Suppose you teach in a room with windows on the south and west, and that the pupils face north. State just what adjustment of the window shades you would make on a clear day from the time of your arrival in the morning until the end of the school day to secure the best possible lighting. 5. Describe three games or physical exercises you consider suitable for use in the upper grades of a State institution school. 6. State in detail a good method of helping pupils to prepare their lesson. 7. To what extent should the instruction of backward children be individual in grades five to eight of a State institution school? Describe fully how you would manage to give the individual instruction you think necessary.

*Special method.*—1. How would you deal with each of these difficulties in a fifth grade reading class: (a) Poor enunciation; (b) Expressionless reading; (c) Habitual mispronunciation of words. 2. To what extent should manual training, domestic science, and other such studies be related to other school work in the case of backward and feeble-minded children? How may this be done? 3. What means would you use to interest an indifferent class in a geography lesson on the corn belt? 4. Which is more important, oral reading or mental reading? Why? 5. What thing should receive most emphasis in the study of the Civil War by a seventh or eighth grade class? Why? 6. How many and what methods of computing interest should be taught in the grades of a State institution school? Why? 7. What can be done to improve poor writing and spelling by a seventh grade boy?

*Knowledge of subject matter.*—1. (a) What is a cold? (b) How is a cold caught? (c) How may colds be prevented? 2. Who is your favorite American author? Why? Name his principal works. 3. What is the cost, at \$26 per M., of twelve 10-inch by 10-inch sills 16 feet long? 4. Name five of the principal agricultural products of the United States, and three states that lead in the production of each. 5. Name three problems the increasing urban population has raised in this country. 6. Select and describe the clauses: This world is so full of a number of things, I'm sure we should all be as happy as kings. 7. What are the principal laws enacted by the present Congress? 8. Explain why southern California has rainy winters and dry summers. 9. Write a composition of 200 to 250 words on "Vocational Training in the Schools." (You will be marked on penmanship, sentence structure, organization, paragraphing, and punctuation.)

### PRINCIPAL.

*Scope and weights.*—School management, 3; general and special method, 3; knowledge of subject matter, 2; training and experience, 2.

*School management.*—1. Outline what you consider the most important duties of a principal in a State institution. 2. Give fully a plan of coöperation between principal and teachers in securing discipline. 3. State what you consider ideal class room conditions as to: (a) Lighting; (b) Heating; (c) Ventilation; (d) Seating. 4. A boy of thirteen is able to do only second grade work. What sort of instruction should he receive? Why? 5. To what extent do you think the common branches can be and should be centered around such subjects as manual training and domestic science? 6.

To what extent should dancing, marching, and other physical exercises receive attention with backward and feeble-minded children? Why? 7. What plan would you use in supervising the work of the teachers under you? 8. Discuss in 200 to 300 words the extent to which vocational training and guidance should be given children in State institutions.

*General and special method.*—1. Give five important points to consider in judging a recitation. 2. Describe three games or physical exercises you consider suitable for use in a State institution school. 3. How may an indifferent child be interested in: (a) Composition; (b) Reading; (c) Arithmetic? 4. What is the value of manual training to a subnormal boy? 5. In what grade and in what way should the study of geography be taken up in a State institution school? 6. A ten-year-old boy has trouble in remembering the addition tables. Suggest three means of overcoming the difficulty. 7. A fifth grade pupil pays no attention to punctuation marks or sense in reading. How may the fault be corrected? 8. A fourteen-year-old girl has difficulty in keeping pace with the fourth grade class to which she is assigned, and becomes discouraged. Name three things that may be done to encourage her to put forth her best efforts.

*Knowledge of subject matter.*—(You will be marked in penmanship from this paper.) 1. It is often said that "hot air rises." Is this a true statement? Give reasons for your answer. 2. What are the conditions that account for the production of three-fourths of the world's corn crop in the United States? 3. Discuss the changes in the tariff laws of the United States since 1860. 4. (a) Whom do you consider the greatest American poet? (b) Why? (c) Name his best known poems. 5. A grocer buys canned corn at \$1.40 per dozen cans, with discounts of 10 and 5 per cent. He sells the cans "two for a quarter." What is his per cent of profit? 6. Name and define the three parts that every sentence must have. 7. Write a composition of about 200 words on the subject "My Favorite Magazine" or "My Opinion of the Good Roads Movement." 8. Make an exact copy of the following: Page 1348, Chapter 85, Section 28, Hurd's Revised Statutes. (Conspiracy to Commit—Penalty.) Any person who shall maltreat (abuse or strike) any insane person shall be guilty of a misdemeanor, and, upon conviction thereof, shall be fined not exceeding \$1,000, or imprisoned not exceeding one year, or both, at the discretion of the court in which such conviction is had.



## CHAPTER X.

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### PRISON POSITIONS.

Persons who work as guards, deputy or assistant deputy warden, or parole agent in the two penitentiaries and the reformatory, should be in good physical condition and be able to keep their heads in emergencies. Guards and parole agents for the Chester Penitentiary must live in the district assigned to that institution. The same holds for the Joliet prison. The dividing line runs approximately from Danville to Quincy. There is no residence restriction for the Pontiac Reformatory. Guards and parole agents must be between 25 and 55 years old, not less than 5 feet 7 inches high, weigh not less than 150 pounds. Female guards must be between 25 and 50 years; minimum height and weight same as for men.

*Opportunities for promotion.*—Guards are in line of promotion up to Deputy Warden, \$150 to \$200 a month. See Classification, Promotion Class E (Prison Service).

### SAMPLE QUESTIONS.

The examination for guard is framed to bring out the applicant's general brightness. For the other positions more stress is laid on the applicant's knowledge of the duties of the position in question and his ability to exercise his judgment. Typical questions follow (not including training and experience):

#### GUARD.

*Scope and weights.*—Training and experience, 3; verbal orders, 1; educational, 1; qualifications and duties, 2½; oral, 2½; good physical condition required.

*Verbal orders.*—The following orders are read twice distinctly to the candidates as a class who write the order down from memory. Grades are based on the substance of the matter written and not on the exact wording as read: 1. Instruct the band leader to have the prison band stationed in the main corridor at noon today to welcome the Governor on his tour of inspection. 2. Take convict No. 836 to the warden's office at 2 o'clock tomorrow afternoon to receive his parole papers.

*Educational.*—1. Name an important law passed by the last Legislature. 2. What are the conditions that make Illinois a leading agricultural State? 3. Name and locate five large cities in the United States and give one important fact about each. 4. In 75 or 100 words, tell the most important facts about the trouble the United States has had with Mexico. 5. Make an exact copy of the following extract from the Civil Service law; (you will be marked on accuracy and penmanship):

Section 1. (Statute, Sec. 3a.) For the purpose of establishing uniformity of pay and title for all offices and places of employment classified in the same grade, it shall be the duty of the commission to prescribe by rule the maximum and minimum pay for each grade.

*Qualifications and duties.*—1. If you had a gang of 10 men outside the walls and 2 of them should start to run away in opposite directions, what would you do? 2. What precautions would you take to prevent prisoners from carrying tools from the workshop to their cells? 3. If you were gate-

keeper how would you examine each of the following passing from the grounds to the outside to satisfy yourself that no prisoner was escaping: (a) A load of hay, (b) A load of manure, (c) A load of 24 inch tile. 4. If you had charge of twelve prisoners and noticed a fight between two convicts not under your charge at a distance of 10 rods from you, what would you do? 5. What are the main purposes of a prison? 6. Describe the proper care of a rifle and give the necessary precautions in the use of a rifle assigned to you for use in guarding the walls. 7. Assume that one of your duties is to keep the time of prisoners in a workshop and that the hours are from 7 a. m. to 12 and from 1 p. m. to 6. Thirty-nine men report at 7 a. m. Seven men are at band practice from 8 to 9. Three men are taken sick and removed to the hospital at 11. Two new men report at 3 p. m. How many men are in the gang at the end of the day?

*Oral.*—The oral examination includes such questions as will bring out the candidate's brightness and familiarity with the work of a guard.

#### DEPUTY WARDEN.

*Scope and weights.*—Training and experience, 3; knowledge of administrative duties, written 5, oral 2.

*Knowledge of administrative duties.*—1. (a) What in your opinion should be the qualifications of an applicant for the position of deputy warden? (b) If appointed to the position of deputy warden, state what means you would use to further fit yourself for the performance of its duties. 2. Outline your plan for maintaining discipline, (a) On the part of employees. (b) On the part of the inmates. 3. What events should you report to the managing officer? 4. (a) Who should interview a prisoner first upon his entering a prison? Why? (b) What should be the nature of this interview? 5. What is an organization as applied to a prison? 6. Should a deputy warden report to the warden every infraction of the rules by officers? Why? 7. What is the purpose of a prison? 8. (a) What particular considerations would determine you in the assignment of a new inmate to an occupation? (b) Would you require all inmates to do tasks assigned them, or would you require more of some than of others? 9. Should an assistant superintendent be court officer? If so, would you hear the prisoner's side? Would you place much credence in his explanation? Why? 10. (a) If you thought the orders of a managing officer wrong would you carry them out? Why? (b) If officers complained to you about your superior officers what would be your answer?

#### PAROLE AGENT.

*Scope and weights.*—Training, 1; experience, 2; technical, written, 4 2/3; oral, 2 1/3.

*Technical.*—1. State briefly the provisions and purpose of the parole law. 2. Why is the indeterminate sentence an essential part of the parole law? 3. What points beside a convict's conduct in prison should be considered by the Board of Pardons in granting or refusing a parole? 4-5. Describe fully the duties of a State Parole Agent, as you understand them. (Write at least 300 words.) 6-7. Assume you are a parole officer and state what kind of conduct you would expect and what kind of supervision you would give to each of the following cases: (a) John Doe, age 25, farmer boy, of previously good reputation, who served term for assault as result of a fight. (b) Richard Roe, age 40, good education and appearance, served four terms, on charges of forgery. (c) William Smith, age 24, who was in a reformatory and served a term in penitentiary for larceny, and who is obviously stupid and weakminded. 8. Suppose you receive a telephone call that one of your paroled men had been arrested, how would you proceed? 9. If the mother of Henry Jones, one of your charges, reports to you that he refuses to work, remains out late every night and is drinking, what would you do? Answer fully. 10. If one of your charges is taken into police court charged with burglary, (a) should you attend the hearing? (b) Should you take the attitude of prosecutor or defender? (c) If the prisoner is held to the grand jury, what action would you take? 11. (a)



Suppose the employer who signs a parole for one year should sell out or change his mind, what would you do? (b) Assuming that a paroled man may be injured, or sick, or otherwise in need of relief, to what city, county and voluntary agencies would you appeal for coöperation? 12. Suppose you are sent to another state to return a parole violator, who is under arrest there, state what legal procedure would be necessary, (a) As to extradition? (b) In case of prisoner's appeal to habeas corpus?

## CHAPTER XI.

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### MISCELLANEOUS POSITIONS.

There are many positions in the State service which do not fall naturally in the scope of the foregoing chapters. Among them are some of the most attractive positions filled by examination, such as food chemist and chief engineer; some are attractive to persons of technical training such as junior engineer in the Highway Commission and library assistant at the University and State libraries; some would be preferred by those who love life in the open, such as deputy game and fish warden, or head farmer. The variety is great. There is scarcely a line of activity not included.

In many of these examinations, an oral or practical test is held on a different date from the written portion. In such cases, it is prescribed that only those who attain a certain grade in the written examination, usually 60 per cent or 65 per cent, will be admitted to the oral test, which is held later at some central point.

In most cases the training and experience of the applicant counts for 3 points out of 10, in a few cases, 4 points. The headings, under which the rest of the test may be divided, differ materially according to the nature of the position. Usually the portion on the law governing the department and the duties of the particular position have the largest weight.

### SAMPLE QUESTIONS.

Some typical questions follow, not including "Training and Experience":

#### HOUSEKEEPER.

*Scope and weights.*—Training and experience, 3; knowledge of duties, 5½; common school requirements, 1½.

*Knowledge of duties and general information.*—1. What qualifications, in your judgment, are essential in a housekeeper? 2. How would you plan your work in order that it might be well done and on time, and no department be neglected? 3. How would you proceed to interest those under you in their work that you might have good service, and also care taken of all supplies given, when you found they knew absolutely nothing of order or economy? 4. After giving orders to those for whom you are responsible, would you feel justified in no further supervision of their work? If not, why? 5. What would you do to gain the respect and confidence of your co-workers in order that they would feel perfectly free to confer with you on all conditions of service? 6. (a) Where would you look on assuming the duties of housekeeper for unhealthy conditions, if, on entering you should find the so-called institution odor? (b) What conditions would follow neglect in keeping refrigerators clean? (c) How would you care for dark, damp corners, toilets, sinks, and basements? (d) How exterminate bed bugs and roaches? 7. How often would you change bed linens, air beds, turn mattresses, and air sleeping, as well as other apartments? Why is this necessary? 8. When supplies, such as table and bed linens are partially worn, how could you utilize them to prolong their use? 9. (a) How would you mark and sort all kinds of clothes before sending them to the laundry? (b) On the return from the laundry, what would you do with the clothes? 10. (a) How often would you make an inventory of supplies received and account for supplies used and worn out? (b) How would you go about making such an inventory? 11. (a) What would you do to prevent an



unreasonable breakage of dishes, or waste of all kinds of foods and supplies? (b) Would you think it necessary to watch the kitchen and dining-room garbage cans? If so, why? 12. (a) What should a housekeeper's duty be in regard to the rules relating to the management of an institution? (b) Should the orders of a superior officer be questioned? (c) Would it be advisable for a housekeeper to be confidential with inmates? Why? 13. In case of a disagreement with your co-workers, what would you do? 14. How many hours should a housekeeper work? 15. What would you do in case of fire?

*Common school requirements.*—1. If five chambermaids are required to perform service in a dormitory for 110 patients, how many maids, each performing the same amount of work, will be required to serve 198 patients? 2. Make out a report of a supply of linen necessary for one week, for one officer's dining-room, containing four tables, each seating eight persons; four dormitories, each containing eight single beds, and six private bathrooms. 3. Give the total combined cost of the following articles for the month of September, 1913, which were served each day during the month:

Daily ration of 68 pounds meat at  $12\frac{1}{2}$  cents per pound.

Daily ration of 32 loaves bread at 4 cents each.

Daily ration of 4 pounds butter at 25 cents per pound.

## HOUSEMOTHER AND HOUSEFATHER.

*Scope and weights.*—Training and experience, 3; educational, 2; knowledge of duties, 2; personal qualifications (oral), 3; physical examination.

*Educational.*—1. A note for \$375 is dated February 5, 1914, and draws interest at 7 per cent per annum; what amount is necessary to pay the note in full today? 2. Tell something of any four of the following: Thomas A. Edison, Monroe Doctrine, Victoriana Huerta, Initiative and Referendum, Industrial Revolution, Panama Canal. 3. How do you account for the present high cost of living? 4. Name four large cities in the United States and give an important fact about each. 5. In 100 to 150 words, tell the more important facts about the present war in Europe.

*Knowledge of duties.*—1. Describe several Sunday amusements suitable for children in institutions. 2. (A) What sort of reading is suitable for the following classes of children: (a) Boy 12 years old. (b) Boys 16 years old. (c) Girls 6 years old. (d) Girls 10 years old. (B) How would you get such children to read the sort of material you consider suitable for them? 3. (a) What problems result from the sort of life children lead in institutions? (b) What is the best method of dealing with these problems? 4. What are the important mental and physical changes in children between the ages of 10 and 16? 5. What are some of the things that might lead to insubordination among children in a cottage? 6. State in detail what you would do if you had charge of 35 children in a cottage and fire should break out at 2 a. m. 7. Is corporal punishment ever justifiable? Why, or why not? 8. Assume that you are in charge of a cottage in which 30 children live. Tell in detail what you would do to keep it clean and sanitary.

A brief oral and physical examination is also given.

## STEWARD.

*Scope and weights.*—Training and experience, 4; technical, 6.

*Technical.*—1. What are the duties and responsibilities of the steward? 2. What are the duties of the storekeeper, and what relation, if any, does he sustain to the steward? 3. What are the duties of the chief cook, and to whom is he immediately responsible in his employment? 4. What percentage of butter fat would you require in milk and in cream supplied to a State institution, and how would you ascertain whether the required percentage was present? 5. What temperature (Fahrenheit) is essential to keep meats, fruits, vegetables, and milk, respectively, in proper condition for use? 6. How short a time (general custom) should elapse between the slaughter and use of meat? 7. How do you distinguish between cow and steer meat in making selection from a carcass hanging in cooler? 8. If the feet and head are removed, how can you determine whether a duck, goose, turkey, or chicken is young or old? 9. How do you ascertain the per capita cost, per day, of maintenance? Give a supposititious case and show the

method by which you obtain the result. 10. (a) What number (crew) of people, not including the chief cook, do you consider absolutely necessary in a kitchen which is to furnish food for 2,000 people, three meals per day? (b) What equipment (not cooking utensils) do you consider essential for use in preparing food for the number of people indicated?

#### WATCHMAN.

*Scope and weights.*—Training and experience, 3; duties, 7. (The applicant must be in good physical condition.)

*Duties.*—1. What, in your opinion, are the principal duties of a watchman? 2. What qualifications do you think a good watchman should have? 3. If you found a trespasser in a building or on the grounds, what would you do? 4. If you discovered a fire in a basement, what would you do? 5. What would you do, while on night duty, to guard against a tendency to sleep? 6. If your tour of inspection required 50 minutes to complete, how often during a 9-hour shift should it be made? 7. If the rules required that no person should be found outside the buildings after 10 p. m., what would you do if you frequently found an employee violating this rule? 8. Should a watchman give special attention to any particular building of an institution? If so, which one, and why? 9. Assume that, during one night's inspection, you find at 12 p. m., an engineer in the superintendent's office; at 12.40 a. m., a relief (not your relief) watchman 10 minutes late; at 1 a. m., a fireman asleep in engine room; at 10.30 p. m., two employees leaving main building; at 3 a. m., door off main corridor to north wing unlocked; at 9.02 p. m., dray leaving supply house. Make a written report on the above facts, arranging the incidents in order of their occurrence after 6 p. m., and explaining what you did on each occasion. 10. What would you do if, while making your rounds, you failed to "pull" one of your signal boxes?

#### CHIEF ENGINEER.

*Scope and weights.*—Training and experience, 3; steam engines, 1; steam boilers, 1; steam pumps, 1; electrical machinery, 1; heating and ventilation,  $\frac{1}{2}$ ; refrigeration,  $\frac{1}{2}$ ; sketching, 1; arithmetic, 1.

*Steam engines.*—1. What is a compound engine? Why used? 2. An engine is working at its maximum capacity, exhausting to the atmosphere; it is desired to increase the load 25 per cent without increasing the steam pressure or the speed. How could this change be effected? 3. What advantage is there in a compound engine over a single engine, where the service conditions are such that the engine must exhaust against a gauge pressure of five pounds? 4. Regardless of design, into how many classes are steam engines divided? Name them. 5. What are the advantages of a four-valve engine? 6. Explain in detail the operation of valve setting on a single eccentric Corliss engine. 7. An open feed water heater heats the entire feed water supply for a battery of boilers aggregating 1,200 h. p. How many gallons of water per hour must it handle when the boilers are running at rated load? 8. (a) Draw an indicator card such as you would expect from a Corliss engine, showing admission much too late and leaking piston. (b) Draw another card showing the above mentioned defects corrected. (c) Explain your method of figuring h. p. as shown by these cards, assuming your own conditions. 9. Explain in detail your method of starting a 250 h. p. tandem compound non-condensing high speed engine direct, coupled to 110 volt direct current generator.

*Steam boilers.*—1. In boiler construction, which is preferable, hand or machine riveting? Give reasons. 2. A boiler fitted with a safety valve set at 100 pounds, and another safety valve also set at 100 pounds, is fitted to the outlet of the first one. What will be the approximate pressure in boiler when blowing off through both valves? 3. How do you figure the safe working pressure of a boiler? 4. (a) Describe the construction of a steam gauge. (b) Why is a loop used in connecting to boiler? 5. (a) Describe a fuel economizer. (b) What effect does the use of an economizer have on the chimney draft? (c) What effect does an economizer have on foreign matter in boiler feed water? 6. How would you proceed to wash a water tube boiler of the "Heine" type? 7. (a) State in detail the difference between



a Heine water tube boiler, a Babcock & Wilcox water tube boiler, and a Stirling water tube boiler. (b) State in detail the difference between a return tubular boiler, a Scotch Marine boiler, and a locomotive type fire box boiler. (c) How many pounds of water per pound of good Illinois lump coal would you expect each of the above types of boilers to evaporate? 8. Describe briefly an evaporation test on a boiler. 9. State briefly the causes and remedies for the following boiler troubles: (a) bags; (b) blisters; (c) grooving; (d) laminated sheets; (e) pitting.

*Steam pumps.*—1. What are the advantages and disadvantages of an outside center packed plunger pump? 2. Why is an auxiliary steam valve necessary on all single cylinder steam pumps? 3. Should a pump, pumping hot water and receiving it at atmospheric pressure, be placed above or below the source of supply? Why? 4. (a) What is the efficiency of an injector when used as boiler feed pump? (b) Can an injector be used in conjunction with a feed water heater? 5. How do you set the steam valves on a duplex pump?

*Electrical machinery.*—1. Will compound wound dynamos run satisfactorily in parallel if the series coils are not connected by means of an equalizer? 2. Explain the method of winding electric motors of following types: Shunt, Series, Compound. 3. How many 16 c. p. lamps may be permitted on one circuit? 4. What changes will have to be made and what apparatus, if any, will have to be purchased in order to use a 50 h. p. direct current, 110 volt, motor as a belted generator? 5. What would be the K. W. rating of the above machine when used as a generator? 6. If your switch-board volt meter indicated 220 volts and the total output was 500 amperes, what would be the resistance in ohms of the circuit (direct current)?

*Heating and ventilation.*—1. Describe the following heating systems: (a) Direct; (b) Plenum; (c) Gravity; (d) Vacuum. 2. Which system is better adapted for institution use, steam or hot water? Give reasons. 3. In a schoolroom there are 25 children. How many cubic feet of air must be supplied per hour properly to ventilate this room? 4. An engine takes steam at 100 pounds pressure and exhausts into a heating system against 2 pounds back pressure. Approximately what per cent of the original heat in the steam (at 100 pounds pressure) is delivered to the heating system? 5. (a) Explain the operation of an automatic air valve; (b) In a hot water heating system, what are the usual temperatures of the flow and the return lines? (c) What is the approximate relative cost of installation between a low pressure steam heating system and the hot water heating system for a private house? (d) Which would you recommend?

*Refrigeration.*—1. State the essential difference between a York Single Acting Vertical Compressor, and a Linde Double Acting Horizontal Compressor, describing your method of adjusting the clearance in each of the two machines. 2. How is the formation of a "feather" prevented in artificial ice made by the Can System? 3. (a) What two chemicals are used in the making of "brine?" (b) Which makes the best "brine?" (c) What is meant by sharp freezing?

*Sketching.*—1. Sketch a longitudinal section of a steam engine cylinder, piston, piston rod, connecting rod and crank, placing the various parts in such a manner as to illustrate the effects of angularity of connecting rod. 2. Sketch a longitudinal section of a horizontal return tubular boiler and setting. 3. Sketch a longitudinal section of bowl of syphon jet closet. 4. How are blue-prints made?

*Arithmetic.*—1. If a brickmason can lay 1,500 brick per day and brick are worth \$6.25 per thousand, how much will it cost to build a wall 40 feet long, 10 feet high and 18 inches thick, salary of mason \$5.20 per day? 2. If Bangor slate is worth \$7.50 per square, what will it cost to cover a roof 60 feet by 90 feet? 3. How many cubic yards of dirt would have to be moved in digging a well 8 feet in diameter and 40 feet deep? 4. A painter agrees to furnish material and labor for interior paintings at 15 cents per square yard; how much would it cost to paint walls and ceiling of a room 38 feet wide, 62 feet long, and 10 feet high?

**DAIRYMAN.**

*Scope and weights.*—Training and experience, 4; technical, 6. (The applicant must be in good physical condition.)

*Technical.*—1. Tell what crops you would raise for a dairy herd and why you would prefer these crops. 2. What is a balanced ration? State the feeds, and give approximate amounts of each, which you would feed to secure a balanced ration. 3. How do you tell the amount and kind of feed to give a cow that is producing milk? 4. Tell how to feed and care for a cow before and immediately after calving. 5. How would you feed and care for a heifer from birth to six months old? From six months to freshening time? 6. How would you feed, house, care for, and manage a bull from six months to two and one-half years old? An old bull? 7. (a) What precautions would you take to prevent tuberculosis? (b) To prevent contagious abortion? 8. Give symptoms and treatment for (a) garget and (b) milk-fever. 9. State how you would prepare the cows for milking and how you would handle the milk until delivered for consumption, to insure a practical method of obtaining a clean, safe product? 10. How would you wash and care for dairy utensils and apparatus?

**HEAD FARMER.**

*Scope and weights.*—Training and experience, 3; gardening, crops, dairying, equipment, soil, and management, 7.

*Gardening.*—1. Classify and give directions for the storage of winter vegetables. 2. Give directions for the making and management of a hot-bed. 3. With what tools should a large vegetable garden be equipped? 4. How may weeds in a garden be kept under control at the least expense? 5. Upon the basis of their feeding habits, into what two classes may insects be divided? 6. What spraying materials are used for combating each class? 7. Name some standard varieties of vegetables. 8. Give plan, including varieties, for starting 10 acres of strawberries, and its management for five years. 9. Give plan for growing the bush fruits. 10. Give plan for growing celery, from germination of seed to harvesting the crop. 11. Give treatments for potato scab and potato blight. 12. Describe pistillate and staminate, and give examples.

*Crops.*—1. Describe how you would seed fields to clover and alfalfa. 2. Describe your favorite system for curing clover or alfalfa hay. 3. What factor most commonly limits crop yields? 4. Give a system for the preparation of ground to be planted to corn. 5. Give some good rotations for different parts of the State. 6. Name six most common legume crops. 7. Give four reasons for a rotation of crops. 8. What is meant by inoculation for legumes? How accomplished? 9. Name some of the most common insect enemies of crops, and suggest remedies. 10. What is meant by soiling crops, and name some. 11. Give your method of growing an oats crop. 12. Give methods for cultivation of corn. 13. In a State institution would it be best to grow crops for market or for consumption?

*Dairying.*—1. Give a rotation of crops for a dairy farm. 2. Give some comparisons between a dairy cow and a beef cow. 3. How would you determine the best cows in a dairy herd? 4. What is meant by sanitary conditions, and name a few principles. 5. Give some essentials for a large production of high quality milk. 6. How long would one acre of silage feed one cow if fed 40 pounds per day? 7. At what stage in growth should corn be harvested for ensilage? 8. What is meant by a "balanced ration?" 9. Give crop plan for an exclusive dairy farm. 10. Give plan of treatment of cows before milking. 11. Give plan for handling milk pails, strainers, cans, etc. 12. Would you pasteurize the milk produced for the inmates of State institutions? Why? 13. Give plan for handling manure on a dairy farm. 14. Suggest remedy for milk fever, also garget.

*Equipment.*—1. Do you understand steam or gasoline engines? 2. Name some essentials in the care of brood mare and foal. 3. How would you care for machinery when not in use? 4. Describe the best hitch for a gang plow. 5. On which side would you sharpen a hoe? A spade? Why? 6. What is the speed of ensilage cutters having blower delivery? 7. Give periods of gestation of some domestic animals. 8. How often should a mower sickle be



sharpened when cutting heavy hay. 9. Give plan for handling brood sows. 10. What is the most common cause of sore shoulders on work horses. Suggest remedy.

*The Soil.*—1. Can you give a formula for permanent fertility? 2. Name some benefits of thorough drainage. 3. What are the functions of vegetable matter in the soil? 4. Name some conditions necessary for good drainage. 5. How would you supply needed mineral elements to a soil? 6. What rotation, if any, would permanently maintain fertility? 7. Is the advantage of returning corn stalks to the land more or less than the disadvantage? Why? 8. What is the purpose of a legume crop in rotation. 9. What fertilizer elements removed by 100 bushels of corn, and their commercial value? 10. Name some reasons for plowing and cultivating.

*Management.*—1. What class of products should be grown on a large farm connected with a State institution having a large number of inmates? 2. Give a general plan for the organization of such a farm. 3. To what extent should such a farm be conducted for educational or demonstration purposes? 4. What is meant by intensive farming, and what is the greatest factor in intensive farming? 5. Should poultry be given a place on such a farm? Could you give poultry your personal attention? 6. What would you consider the most essential requirement in the manager of such a farm? 7. What difficulties would you expect in securing efficient labor from the inmates of a State institution? 8. Should the live stock equipment on a State farm be pure breeds or grades? Why? 9. Should an institutional farm be conducted with reference to the greatest service to the inmates, or to making money for the State? 10. Would you attempt to enforce stringent rules regarding hours of labor, and how would you enforce them?

#### ASSISTANT STATE VETERINARIAN.

*Scope and weights.*—Training and experience, 3; technical, 7.

*Technical.*—1. Describe (a) natural immunity; (b) artificial immunity. How may the latter be produced? Give examples. 2. What is the causative agent of infectious abortion? Describe methods of its prevention and control. 3. In cattle, how may foot-rot be distinguished from gangrenous ergotism? Give the treatment of each. 4. Describe the symptoms of rabies. How would you proceed to confirm a diagnosis in doubtful cases? 5. What post-mortem findings would enable you to differentiate between hog cholera and the intestinal type of tuberculosis? 6. Describe the symptoms and post-mortem findings of chronic bacterial dysentery (Johne's disease). 7. When eradicating glanders from a stable describe (a) The necessity for disinfection; (b) Preparation of the building; (c) Selection and preparation of the disinfectant. 8. Under what physical condition, affecting the animal, would you refuse to administer sub-cutaneously (a) the mallein test; (b) the tuberculin test? 9. (a) Name the different methods of testing cows for tuberculosis with tuberculin; (b) What, in your opinion, indicates a reaction to the sub-cutaneous tuberculin test? 10. (a) Describe clinical symptoms of foot and mouth disease in cattle; (b) How would you make a positive diagnosis in doubtful cases? (c) How would you eradicate an outbreak?

#### FLORIST.

*Scope and weights.*—Training and experience, 3; technical, 7.

*Technical.*—1. What kind of a mixture makes the best potting soil for general use? 2. What day and night temperature is best for growing: (a) bedding plant; (b) Rose; (c) Carnation; (d) Palms? 3. How should geraniums be propagated? Carnations? Roses? 4. Name 12 annual garden flowers that are grown from seed, and a few that can be grown from cuttings. 5. Give a description of a cold frame and its use. 6. How would you destroy caterpillars on trees and shrubs? 7. When would you prune lilacs, hydrangeas, and hardy shrubs of this class? Tell why. 8. Name three kinds of insects injurious to greenhouse plants. 9. State how you would proceed to destroy them. 10. Name 12 hardy shrubs. 11. Name 12 herbaceous or perennial plants.

**DEPUTY FIRE MARSHAL.**

*Scope and weights.*—Training, 1; experience, 2; duties and law, 3; building construction, 1; oral, 3. (The applicant must be in good physical condition.)

*Duties and law.*—1. What do you consider to be the qualifications required in a candidate for the position of deputy fire marshal? 2. What do you consider to be the duties of a deputy fire marshal in the State of Illinois? 3. Define (a) Fire-bug; (b) Pyromaniac; (c) Incendiarism. 4. State all the reasons or conditions that would lead you to believe that a fire was a result of (a) incendiary origin; (b) spontaneous combustion. 5. (a) Give all the essential facts regarding the works and methods of a pyromaniac. 6. What would be your course of procedure in a case of a pyromaniac you had caused to be taken into custody? 7. What objection would there be to taking the testimony of a man suspected of incendiarism? 8. In securing a confession of an incendiary, what points would you consider necessary to make such confession admissible as evidence in court? 9. What is the most potent factor in preventing accidents and loss of life in a school house fire? 10. Draft a circular of caution which you might send out either at Christmas time or the Fourth of July? 11. You are seeking evidence to convict the owner of a store of arson. The man's brother-in-law says the store was over-insured. The man denied this and retorts that his brother-in-law is actuated by malice. A small boy informs you that he heard that a wagon had "backed up" in front of the store at 4 a. m. and carted away a lot of goods. This the owner denies. A neighbor says that he heard a quantity of kerosene had been delivered at the store a week before, the remains of several kerosene cans were found in the store after the fire, which the owner says were used by him in connection with sealing wax. (a) To what extent, if any, could you use the foregoing as legal evidence? (b) What investigations, if any, are necessary? (c) What investigations would you make, and what evidence would you endeavor to produce to substantiate each of the foregoing statements which you believe to be trustworthy? (d) With a view of helping the State's Attorney, how would you prepare the evidence in the case? 12. According to the statutes, what constitutes arson in this State?

*Building construction.*—1. (a) What types of buildings other than hotels more than two stories in height are required by State law to be equipped with fire escapes? (b) When do the provisions of the general fire escape act not apply? (c) What form of escape must be provided in every hotel room above the second floor? 2. What practical suggestions would you make for occupants or owners of a tenement house to prevent fires from each of the following causes: (a) Ashes; (b) Wiring; (c) Chimneys; (d) Spontaneous Combustion; (e) Matches and Candles; (f) Gasoline. 3. Name five important requirements to be observed in installing or equipping moving-picture machines.

**MINE RESCUE ASSISTANT.**

*Scope and weights.*—Training and experience, written, 2, oral, 2; report, 1; practical test, 5. (The candidate must be in very good physical condition.)

*Report.*—Suppose that you have been sent from a mine rescue station to a mine where an accident has occurred. Write a brief report, addressed to the manager of mine rescue stations, stating the preparations you made, what you found at the mine, and what you did there. (Assume any details needed.)

*Practical test.*—The candidate was required to give evidence of his training in first aid to the injured, and also was asked questions relating to practical rescue work in mines and the use of the oxygen helmet.

**DEPUTY GAME AND FISH WARDEN.**

*Scope and weights.*—Training, 1; experience, 2; knowledge of law, 2; transportation routes, 1; identification of birds, fish, and game, 1; oral, 3. (The applicant must be in good physical condition.)

*Knowledge of law.*—1. What is the legal limit for one day's shooting by one person of the following game: (a) bobwhite quail; (b) prairie chicken; (c) squirrel; (d) snipe; (e) plover; (f) mourning dove; (g)



duck; (h) goose; (i) brant; (j) coot; (k) rail. 2. (a) If on December 20 a citizen of Illinois kills 14 ducks near Havana, Ill., will he violate any law? (b) If so, how would you as a deputy warden in that district proceed to have him prosecuted? 3. What are the license fees for the following licenses: (a) resident game license, (b) non-resident game license, (c) wholesale fish market license, (d) resident license for each 100 yards of seine, (e) non-resident license for each 100 yards of seine. 4. Who sells these (see above question) licenses and how often should he send to the State Treasurer the money he collects? 5. On inspecting an outfit of fish nets, how can you tell whether the proper licenses have been obtained? 6. What is a fish preserve and what is its purpose? 7. (a) What fish may be caught only with hook and line in Illinois? (b) What fish may never be sold if caught in this State? 8. (a) What is the closed season for fishing with nets in the rivers of this State? (b) What should the deputy wardens do to enforce the law at this time? 9. You are a deputy warden and a farmer complains that a hunter from town killed robins and meadow larks on a Sunday trip. The hunter admits this but says the farmer has killed robins that were eating cherries in his orchard. Explain whether either or both of these men violated the law and how. 10. A deputy warden in Chicago in October examining a barrel tagged "Fish," shipped from Peoria, discovers it to be filled with wild ducks. Describe in detail what he should do. 11. How must confiscated fish be disposed of? 12. How must confiscated game be disposed of?

*Transportation and inspection.*—1. If a deputy warden is ordered to proceed to a certain small city and inspect all shipments of fish and game received there for a week, how should he go about it? 2. From what points in this State are the largest shipments of fish to markets made? 3. What railroads carry the largest percentage of the above mentioned shipments? 4. How would you proceed to search for illegal fish or game in an express company's office? 5. How would you proceed to look for illegal fish or game in transit between two points, if ordered to inspect the shipments on a certain railroad?

*Identification of specimens.*—The candidate was required to identify 19 birds, 13 fish and 2 small animals, all common in Illinois, and to state the requirements of the law, such as open season and the minimum legal size of fish.

*Oral.*—The oral examination related to the personal qualifications of the applicant and his judgment under assumed circumstances.

## FOOD CHEMIST.

*Scope and weights.*—Training and experience, 4; inorganic chemistry, 2; organic analysis and microscopy, 4.

*Inorganic Chemistry.*—1. What indicator would be used in the following reactions, and why:  $\text{NH}_4\text{OH}$  plus  $\text{HCl}$ ;  $\text{Na}_2\text{CO}_3$  plus  $\text{HCl}$ ;  $\text{CH}_3\text{COOH}$  plus  $\text{NaOH}$ ;  $\text{NaCl}$  plus  $\text{AgNO}_3$ . How would you prepare and standardize a tenth normal solution of  $\text{KMnO}_4$ ; a 1.25 per cent solution of sulphuric acid? 3. (a) A sample of a food stuff contains 15.1 per cent of  $\text{H}_2\text{O}$ , but is dried to 2.3 per cent  $\text{H}_2\text{O}$  and is then analyzed with the following results: Starch, 17.1 per cent; fat, 4.3 per cent; ash, 1.17 per cent. What were the percentages of these three constituents in the original sample? (b) The calcium oxalate precipitate from a solution representing .213 g. of limestone requires 16.4 c. c. of  $n/10 \text{ KMnO}_4$ . Calculate the per cent of  $\text{CaCO}_3$  in the limestone. Atomic wts. Ca 40.07; C 12.00; O 16.00. 4. How would you determine iron in the ash of wheat? 5. How would you test a sample of hydrogen peroxide for the per cent of  $\text{H}_2\text{SO}_4$ ; of arsenic? 6. What method would you use to determine the per cent of  $\text{CaCO}_3$  in a chicken feed consisting of wheat, corn, sunflower seed, charcoal, calcium phosphate and calcium carbonate?

*Organic analysis and microscopy.*—1. Discuss in detail the significance of the analytical data and physical characteristics which should be considered in connection with the examination and analysis of shelled eggs to determine their fitness for human consumption. 2. Describe the methods of analysis of a sample of vinegar covering the following details: acidity,

total solids, ash, polarization, lead acetate precipitate. If the specimen labeled "Pure Cider Vinegar" yielded an analysis as follows: Acetic acid, 4.66 per cent; total solids, 2.92 per cent; ash, .2 per cent; ash in solids, 6.49 per cent; polarization (in 200 mm. tube) plus 2.2; lead acetate, no precipitate. What would be your judgment as to the genuine or spurious character of the sample? Give your reasons for your opinion. 3. Describe the methods of obtaining the Reichert-Meissl number, the saponification value, and the iodine number of fats. 4. How would you distinguish olive oil from cottonseed oil? 5. Give the methods for the following determinations: (a) sucrose in syrup, (b) total sulphur in a ground cereal. 6. By what characteristics would you detect the following under the microscope: (a) wheat flour, (b) calcium oxalate, (c) ground oats, (d) potato starch, (e) cottonseed meal, (f) yeast. 7. (a) Give a qualitative test for each of the following: (1) aldehydes, (2) proteins, (3) organic acids. (b) How would you determine the melting point on a sample supposed to be vanillin if only .01 gram was available for the test? 8. Describe the method of manufacture of any one of the following products: beer, glucose, vinegar, malt, glycerine, gelatin, whiskey. 9. Name and write formulas for five carbohydrates; four alcohols, four organic acids; two aldehydes. 10. 1.65 g. of flaxseed is used in a protein determination, and the ammonia formed exactly neutralizes 60.4 c. c. of  $N/10$  acid. The same sample is found to contain 6.25 per cent of fibre and 38.1 of oil. If 34.3 per cent of oil is pressed from the seed what will be the percentages of protein, oil, and fibre in the seed after pressing?

#### ASSISTANT EXAMINER, (CIVIL SERVICE).

*Scope and weights.*—Training and experience, 3; oral, 2; preparation and conduct of examinations, 5.

*Oral.*—This part of the examination related to the personal qualifications of the applicant, his familiarity with the civil service law, and his judgment under certain assumed circumstances.

*Preparation and conduct of examination.*—1 and 2. Grade the attached examination papers in an examination for the position of Clerk Grade II, and give your reasons for each mark in the space at the right hand side. 3. In what subjects would you examine an applicant for the position of matron in the State Training School for Girls? Give your reasons. Statement of duties of matron, is as follows: "Matron has charge of an assigned number of inmates of an institution; directs housekeeping and in some cases disciplinary work." 4. Draw up a set of instructions for monitors governing the proper supervision of an examination. 5. What is the purpose of: (a) A civil service examination? (b) A school examination? (c) In the preparation of the former, what guiding principles would you follow? 6. Outline what, in your opinion, should be a proper examination for a stenographer, giving details. 7. As assistant examiner, you have been asked to give the most effective publicity to examinations called for the following positions: physician, stationary engineer, school teacher. State what means you would use in each case. 8. Section 4, of Rule III of the Rules of the State Civil Service Commission is as follows: (General Average)—All examinations shall embrace subjects to which weights shall be assigned to represent their respective relative values in determining the fitness of applicants. Each subject of examination shall be graded independently; this grade shall be multiplied by the weight assigned to such subject; the resulting products shall be added; the total of the products shall be divided by the total weight of all subjects in the examination; and the resulting quotient shall be the general average to be used in determining the order in which the names of the candidates shall appear on the eligible register. In an examination for the position of guard the scope and weights were as follows: Special subject, weight of 4; training and experience, weight of 3; educational, weight of 1; physical, 2. A certain applicant, No. 716, received the following grades: Special subject, 75; training and experience, 70; educational, 80; physical, 85. Find the general average of No. 716.

#### LIBRARY ASSISTANT.

*Scope and weights.*—Training and experience, 3; technical, 7.



*Technical.*—The last question is numbered “4-10” to indicate that, relatively, it weighs as much as seven ordinary questions. 1. Give the distinctive features of the system of book classification with which you are most familiar. 2. Answer either (a) or (b): (a) Explain 15 of the following class numbers: 425, 904, 620.3, 864, 973, 520.9, 331, 105, 554.4, 881, 914.2, 810, 913.37, 650, 350, 780, 317, 342.73, 917.3, 550.5. (b) Give class numbers or letters, according to any system of classification with which you are familiar, for 12 of the following subjects: Zoölogy, Travel in Italy, German Newspapers, Dictionary of Psychology, French Poetry, Medical Journals, Essays on Education, Dictionary of Musical Terms, Geology of Mexico, Foreign Relations of United States, History of Agriculture, Essays on Architecture, Greek Archeology, Evolution, Biography of H. W. Longfellow. 3. Answer both (a) and (b): (a) Give the best form of entry for the following: Bulletin of the insular affairs Bureau of the U. S. War Department. Reports issued by the U. S. Bureau of Labor. (b) The Library Committee of your library considers Library of Congress cards an extravagance. Give all arguments you can in favor of their use, telling also the cost, the ways in which they may be ordered, and where order numbers may be found. 4-10. Catalogue on cards as completely as you can from the information given, six of the following books. Write *in full* all the necessary cards, assign the necessary subject headings; indicate in your paper whether your cards are made for a dictionary catalogue, or a classed catalogue, etc. Draw a circle about such words (if there are any) on the cards that you think should be in red ink. Write your examination number (*not your name*) on each card. Fasten your cards together with a rubber band.

The applicant was given the sample title pages of 13 books for use in answering the above question.

*Technical, Second Paper.*—1. Write a letter, in proper business form, to the firm of A. S. Bland & Son, Chicago, ordering for a public or school library the books listed below. Sign an assumed name, as librarian.

Memoirs of Li Hung Chang; edited by William Francis Mannix, with an introduction by Hon. John W. Foster. Boston and New York. Houghton, Mifflin & Company. 1913. (Order two copies.)

The Soapmakers Handbook of Materials, Processes, and Receipts; edited chiefly from the German of Dr. C. Deite, with additions by William T. Brandt. Second edition, revised and in great part rewritten. Philadelphia. H. C. Baird & Company. 1912.

Gitanjali (Song offerings) by Rabindranath Tagore; with an introduction by W. B. Yeats. Macmillan & Co., London. 1913.

The Struggle for Bread; a reply to “The Great Illusion.” London. Jane Lane Company. New York. John Lane Co. 1913.

The Part of Adventure, by C. N. and A. M. Williamson, Garden City, N. Y. Doubleday, Page & Co. 1913. (Library binding.) 2. Define each of the following and tell how it may be of use in a library: (a) Accession record; (b) Shelf list; (c) List of books withdrawn from the library. 3. Rule off a card, or any form of serial record with which you are familiar, and check the receipt of the numbers of the periodical listed below:

Teachers’ Magazine. (Not published in July and August.)

- 1909, June, Vol. 6, No. 1;
- 1909, September, Vol. 6, No. 2;
- 1909, October, Vol. 6, No. 3;
- 1909, December, Vol. 6, No. 5;
- 1910, January, Vol. 6, No. 6;
- 1910, February, Vol. 7, No. 1;
- 1910, March, Vol. 7, No. 2;
- 1910, April, Vol. 7, No. 3;
- 1910, May, Vol. 7, No. 4;
- 1910, June, Vol. 7, No. 5;
- 1910, September, Vol. 7, No. 6;
- 1910, October, Vol. 7, No. 7;
- 1910, November, Vol. 7, No. 8;
- 1910, December, Vol. 7, No. 9.

4. Answer either (a) or (b), and answer (c). (a) Name and describe briefly five public documents which would be of value in a public library; (b) Name and describe briefly five public documents which would be of value in a normal school library; (c) Describe the best method of securing these documents. 5. In what reference book or books would you expect to find answers to any 10 of the following: (a) The attributes of Zeus; (b) Brief description of the city of Bloomington, Ill.; (c) Meaning of the phrase "noli me tangere"; (d) Author of "School for Scandal"; (e) Account of the movement known as Transcendentalism; (f) Real name of George Sand; (g) Brief biographic sketch of Carter H. Harrison; (h) Mailing address (state, city, street and number) of Julia Lathrop; (i) The text in English of the latest constitution of Japan; (j) A map showing the location of the clans of Scotland; (k) A reproduction of Raphael's "Sistine Madonna." (l) A recent and fully illustrated article on the monotype. 6. Suppose yourself to be working as an assistant in a normal school library in Illinois. The school debating team wishes to debate with another normal school team. What question would you suggest; state briefly one argument on the affirmative of the question and one on the negative; what general aids would you procure for the debaters? Be specific in your answer. 7. Give a list of what you would consider adequate trade bibliographical equipment for an average public library that spends about \$800 per year for books. 8. Where would you look for the following (choose any three of the six):
- (a) Number of titles published up to 1879 in a series described by the words "Shakespear' scher Stucke fur Schulen, hrsg. von E. Schmidt."
  - (b) Full list of Winston Churchill's works, with date, publisher and price of each.
  - (c) Title of a recently published work in French on Paris bridges.
  - (d) Price of transactions of the Gas Institute (British) for 1900.
  - (e) Author, publisher and price of "V. V.'s eyes."
  - (f) Publisher, date of publication and price of Senator Cullom's "Fifty Years of Public Service."
9. Give a good rule for either a normal school library or a State library to follow in regard to each of the following: the number of books which a reader may borrow at one time; fines for overdue books; loaning books to other libraries; the loan of books to pupils in the local schools; the loan of books to high school teachers. 10. What is meant by (a) The A. L. A. Book-list; (b) The Readers' Guide; (c) A Reader's Card; (d) A Library Commission; (e) A Municipal Reference Library?

#### JUNIOR ENGINEER.

*Scope and weights.*—Training and experience, 3; specifications, 2; analysis of simple structures, 1; road design and construction, 2; concrete highway bridge design and construction, 2.

*Specifications.*—1. "It shall be the duty of the inspector to see that the provisions of the contract and specifications are fulfilled by the contractor; in case all the requirements of the specifications are not fulfilled, to report the same immediately to the engineer. Any instructions which the inspector may give the contractor shall in no wise be construed as releasing the contractor from the proper fulfillment of the terms of this contract as determined by the engineer. The inspector will perform such other duties as the engineer may indicate." State certain difficulties which you think might arise in the progress of the work; then say how you would handle them under the above specification. 2. "After the stone has been spread, it shall be rolled to the satisfaction of the engineer." What would be your comment on such a clause?

*Analysis of simple structures.*—1. List the steps, in consecutive order, that you would go through in determining the amount and nature of the stresses in the various members and parts of a pin-connected highway Pratt truss.

*Road design and construction.*—1. Explain the principles of construction of each of the following kinds of roads: (a) Dragged earth road. (b) Concrete. 2. Give a list of the items on which cost should be kept on water-bound macadam construction. 3. Give an outline of the data that



should be secured when making a survey of the improvement of a country highway. How much time and how many men would be required in making a survey for one mile of road 4. (a) What is the maximum distance to which it is economical to move dirt by (1) slip scrapers, (2) wheel scrapers. (b) Within what limits should the cost per cubic yard vary for each of the above methods?

*Concrete highway bridge design and construction.*—1. (a) Sketch a section through a cantilever reinforced concrete retaining wall. Indicate where the reinforcement should be placed. (b) List the steps necessary to produce the design of the slab and girders of a through girder concrete highway bridge. 2. Under what conditions is it proper to use sand which contains clay or loam? 3. How would you determine whether a continuous mixer is delivering concrete of the proper proportion? 4. What information would you secure to enable the office force to design the foundation for a bridge abutment or pier? 5. Assume that the analysis of an unscreened gravel shows 60 per cent sand and 55 per cent stone (with reference to the original volume of the gravel). How many sacks of cement should be used per cubic yard of gravel, assuming that one part of cement is to be used with each  $2\frac{1}{2}$  parts of sand?

## CHAPTER XII.

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### SKILLED LABOR POSITIONS.

Examinations for skilled labor positions may be of any one of three types (a) written, (b) unassembled, or (c) practical test. Practical tests are being used in most cases. The written examinations are similar in character to those outlined in previous chapters, the questions being such as to bring out the applicants experience and his knowledge of the details of his trade. An unassembled examination is given when it is not possible to bring the applicants together at the usual examination centers for a written or a practical test. It consists of a set of questions covering the training and experience of the applicant who fills out his answers on a sheet provided for that purpose and returns them to be graded. The identity of the applicant is concealed in unassembled examinations as well as in the usual tests.

When a practical examination is held, after first writing a brief statement of his training and experience, the applicant is given some piece of work to do which might come to him at any time if he were appointed to a position in the State service. In the following pages are typical examples. He is graded on the time it takes to do the job, his manner of handling the tools and the condition of the finished work. Questions relating to his duties may be asked orally by the examiner and answered orally by the applicant. These methods make the examinations practical for experienced and competent men who have difficulty in writing.

Usually the portion of the examination covering Training and Experience is given a weight of 3 out of 10 points. The other points are divided among the important parts of the duties of the position. Good physical condition is required of all applicants for such positions.

### SAMPLE QUESTIONS.

Following are typical questions and information concerning practical tests, the portion on training and experience being omitted.

#### ELECTRICIAN.

*Scope and weights.*—Training and experience, 4; oral examination, 4; practical test, 2; physical examination.

*Oral.*—1. What should be the proper separation of wires for the following voltages, and under the following conditions. (a) 110 volts on open work. (b) 110 volts on concealed work. (c) 500 volts on open work. (d) 500 volts on concealed work. 2. Can an electric heater circuit of 2,000 watts be installed in metal moulding? 3. What are the principal differences between A. C. and D. C. arc lamps? 4. What are the advantages of the Edison 3-wire system over the 2-wire system? 5. What great advantages have shunt wound motors? 6. Explain fully one way of reversing the polarity of a compound wound D. C. generator. 7. What are the requirements regarding the grounding of metallic conduit in interior wiring? 8. How many quarter bends are permitted between outlets on conduit work? 9. What is the object of Underwriters Rules, and by whom are they formulated? 10. Where wires cross water pipes, should they run over or under the pipes? Why?

The following question, No. 11, is to be asked only in case it is impossible to give the practical test with the electric fan. 11. Give at least two causes of the following direct current motor troubles: (a) Hot bear-



ings. (b) Hot armature or fields. (c) Sparking at the brushes. (d) Belt running off. (e) Motor fails to start when switch is closed.

*Practical test.*—Some ordinary piece of electrical apparatus, such as a small desk fan, is placed in operation before the candidate who is required to say whether the machine is in proper working order and if not is required to correct the fault.

## PLUMBER.

*Scope and weights.*—Training and experience, 4; oral, 3; practical, 3; physical.

*Oral.*—1. Describe workings of a siphon jet closet. 2. How ventilate a trap? 3. What will prevent trap siphonage? 4. Is it necessary to ventilate a water closet bend? If so, why? 5. Why are soil pipe lines increased at the roof? 6. How would you arrange to get hot water at faucet as soon as opened? 7. Is it practical to place floor drains in toilet rooms? If so, how should they be placed? 8. How clean out an outside hose connection? 9. Where there is a water tank on top of a building, how would you figure the pressure at each floor?

*Practical tests.*—1. Wipe a joint ( $\frac{1}{2}$  inch T joint to 1 inch pipe). (Furnish each candidate an 18 inch length of  $\frac{1}{2}$  inch lead pipe and an 18 inch length of 1 inch lead pipe. Have tools and wiping cloth ready, furnace going, and solder and lead hot. Then inform the candidate of the work assigned to him and tell him that he will be graded on the time it takes him to do the work, the method of doing it, his manner of handling the tools, and the appearance of the finished job. **KEEP A RECORD OF THE TIME HE STARTS WORK AND THE TIME HE FINISHES.** In grading the candidates, consider only the method, manner of handling tools, and the appearance of the finished job. The grade on speed will be given after the records of all candidates are received at this office. 2. Lay out on a table about 30 tools and parts. Point out ten of these (one at a time) and have the candidates identify them by NAME, SIZE, and USE. 3. State any ordinary job. Have the candidate select from the table tools he would use. 4. Hand the candidate the set of blue prints furnished herewith (3 sheets) of a residence on which the plumbing is indicated. Have him make out a full bill of materials, indicating on the blue print the size to be used. Have him place his number on the blue print and on each sheet of paper he uses.

## FIREMAN.

*Scope and weights.*—Training and experience, 3; oral, 4; practical, 3.

*Oral.*—(Select a boiler in the power plant). 1. What is the proper height for water in this boiler? 2. Where is the fusible plug located in this boiler? (Have candidate locate this plug). 3. How would you prepare to cut in this boiler on the main header when other boilers are already connected? 4. How would you prepare this boiler for cleaning? 5. If the water in the boiler is low and the feed pump or injector refuses to work, what would you do? 6. How often should this boiler be blown down? 7. How hot should feed water be when it enters the boiler? 8. What things affect consumption of coal? 9. What things affect smoke production? 10. Name several kinds of automatic stokers?

*Practical tests.*—*Select a boiler.* 1. Have the candidate clean the fire. 2. (a) If there is no automatic stoker, have the candidate shake the fire down and fire the boiler. (b) If there is an automatic stoker, devise some test to bring out his familiarity with the apparatus. (Watch the action of the candidate and grade him on the manner in which he does his work, as well as on the results obtained. If possible, have the examining physician watch the candidate's action during the practical test.)

## STATIONARY ENGINEER.

*Scope and weights.*—Training and experience, 3; boilers,  $2\frac{1}{2}$ ; engines,  $2\frac{1}{2}$ ; electrical machinery, 1; pumps and heaters, 1. (The following questions are all answered orally):

*Boilers.*—1. How and what would you inspect in making an inspection of a horizontal tubular? 2. How do you clean a H. T. boiler? 3. What

precautions would you use in cutting in boilers? 4. What steps should be taken if water gets too low? 5. What causes foaming and priming and how remedied? 6. How do you figure horse power and heating surface? 7. Does square feet of grate surface have any bearing on the size of safety valve? 8. Care of tubes.

*Engines.*—1. Describe the construction and operation of a direct connected unit. 2. Explain different appliances that are used to prevent wreckage of engine from water. 3. Describe Corliss valve setting (a) simple, (b) compound. 4. Describe complete operation in taking down and lining up an engine. 5. Explain operation of two engine governors and state some causes of poor regulation. 6. (a) What is lap and lead? (b) Formula for H.P. of engine.

*Electrical.*—1. What is a volt? Ampere? Ohm? 2. What is a rheostat? What is a starting box? 3. What causes a generator to reverse its polarity? 4. What is meant when we speak of the equalizer? 5. Explain operation of cutting two generators into parallel. 6. How would you test a motor or generator for a ground?

*Pumps and heaters.*—1. Describe in detail the work in overhauling a duplex pump. 2. Explain the use of a vacuum pump on a heating system and how operated. 3. Explain the difference between open and closed heaters and different appliances used in connecting same. 4. What should be the temperature of boiler feed water when leaving the heater? 5. Explain the operation of a back pressure valve.

## CARPENTER.

*Scope and weights.*—Training and experience, 3; oral, 3; practical test, 4.

*Oral.*—1. What is the run of a rafter? The rise? What is meant by pitch? 2. How are butts placed on doors and casement windows? 3. State the different steps in handing double-hung windows. 4. At the point where a partition meets an outside wall, what should be the arrangement of the studding? 5. What rise and tread should be used on a stairway in a dwelling? What relation should exist in the width of the various treads? 6. Name five kinds of wood used in building construction and give briefly the characteristics of each. 7. What kinds of wood are ordinarily used for the following: (a) shingles, (b) lath, (c) finish flooring, (d) rough flooring, (e) siding, (f) studding.

*Practical test.*—Make one stringer for a stairway. You will be marked on your method of handling your tools, the quality of the completed work, and the time required.

Specifications: Run—2 feet, 4 1/8 inches. Height—2 feet, 5 1/4 inches. Four risers. Three steps. Make the risers mitered. You will be allowed a maximum of 30 minutes to complete the job. Dimensions should be exactly like specifications. Place your examination number in pencil on the completed stringer.

## STEAMFITTER.

*Scope and weights.*—Training and experience, 3; oral, 3; practical test, 4.

*Oral.*—1. What kind of pipe and fittings should be used on high pressure work? 2. Assume that you have to run a 400 foot pipe line leaving the power plant and going into another building—what fittings would you use? 3. How much expansion would you allow for in the above pipe line? 4. Should a branch from a heating main be taken from the side or top of the main? 5. What different kinds of heating systems are there? Where is each one advantageous? 6. Show the candidate the reducing valve where the high pressure steam enters low pressure main. Ask him in what manner he would turn the steam into the low pressure main. 7. How is a vacuum maintained in a heating system? What is it for? 8. How would you proceed to cut a close nipple?

*Practical tests.*—Have laid out some 35 or 40 different fittings and valves. Pick up ten of them—one at a time—have the candidate give the trade name, size and use of each. Indicate a place where a radiator is to be installed. Ask candidate to name all the tools he would need for the job.



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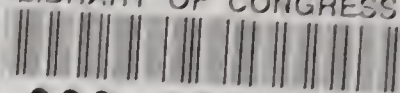
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